VOLUME VI DECEMBER, 1913 NO. 12

Southern Medical Journal

Journal of The Southern Medical Association

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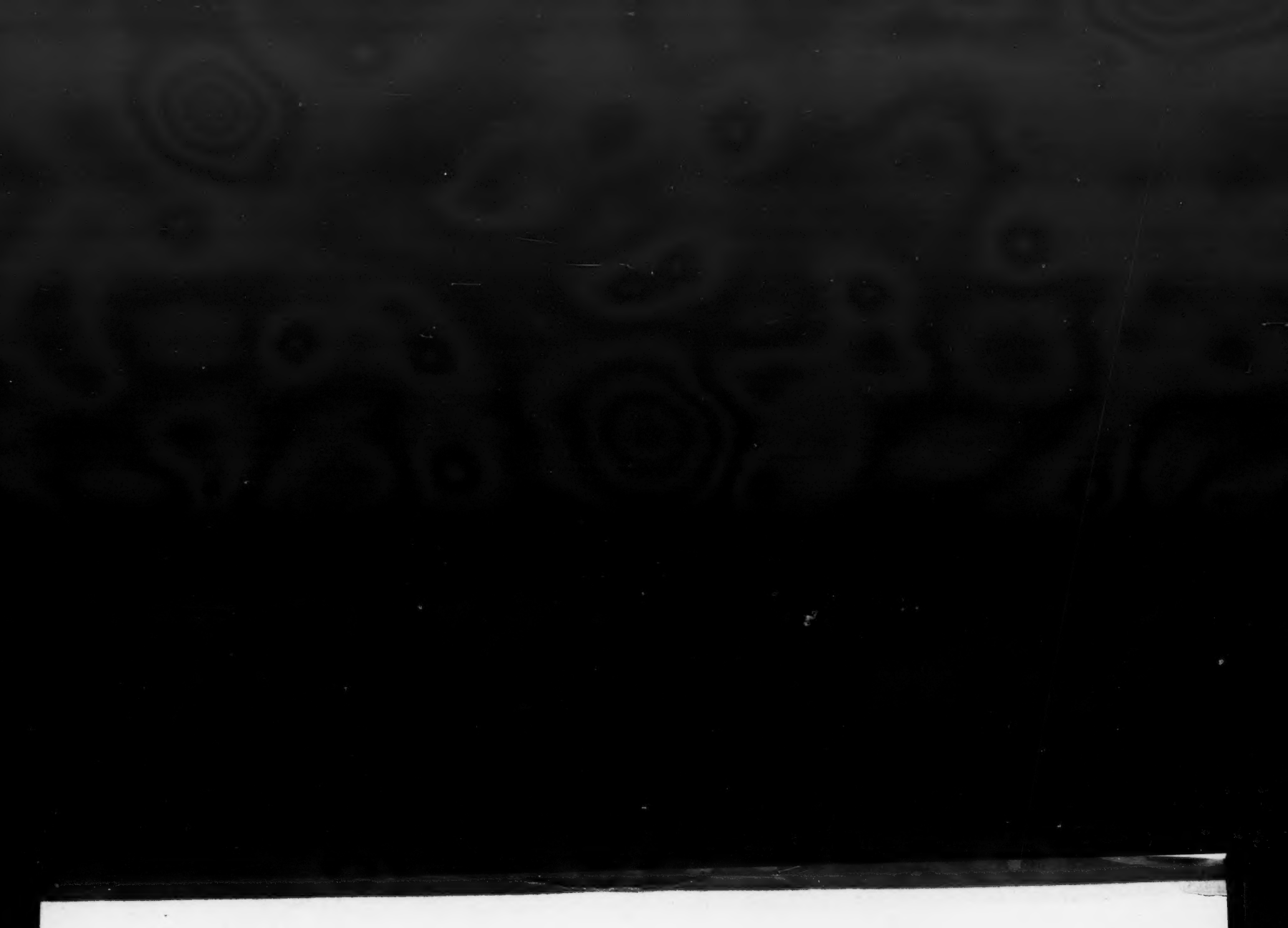

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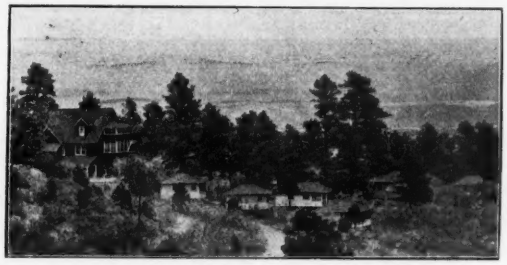

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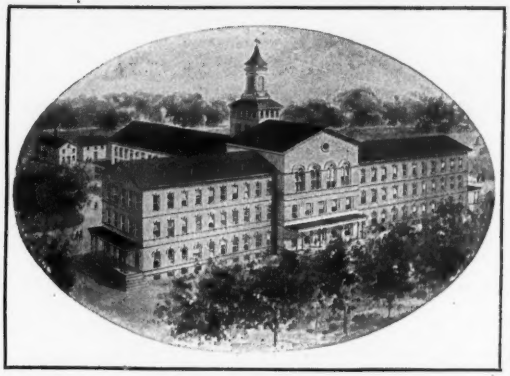

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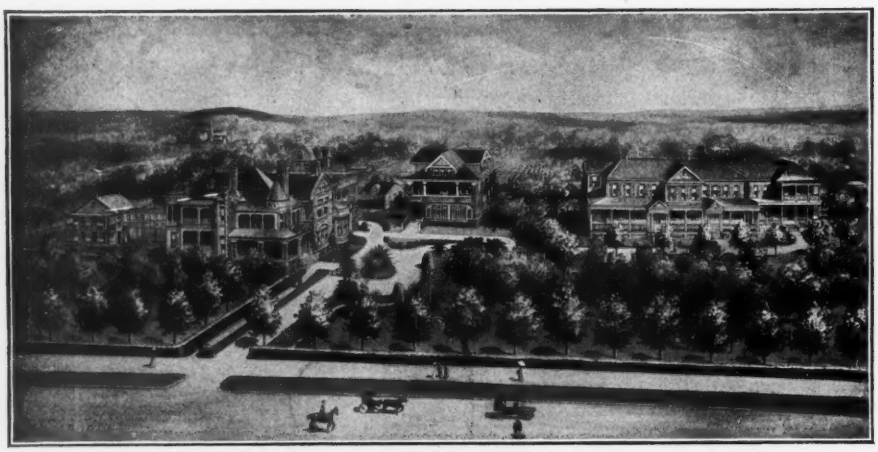

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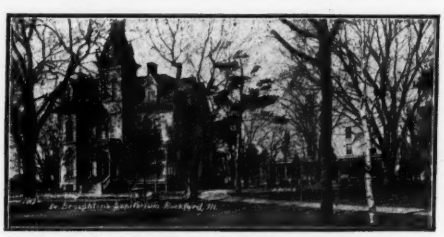

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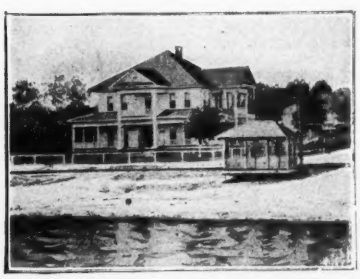

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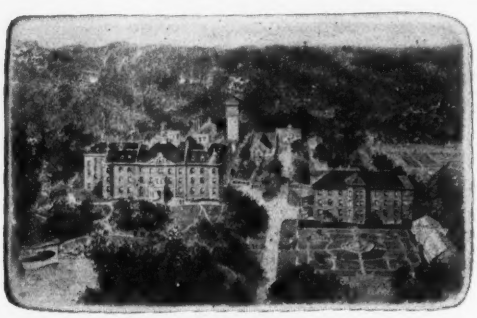

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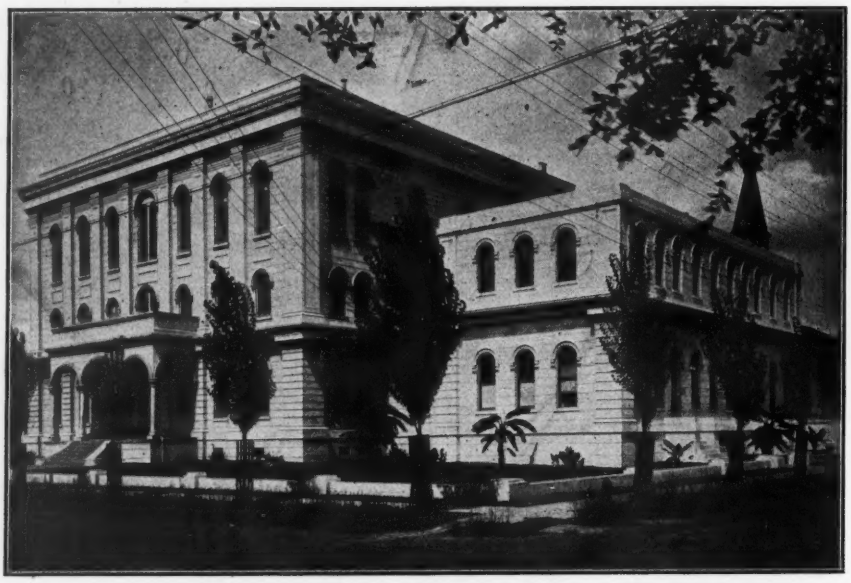

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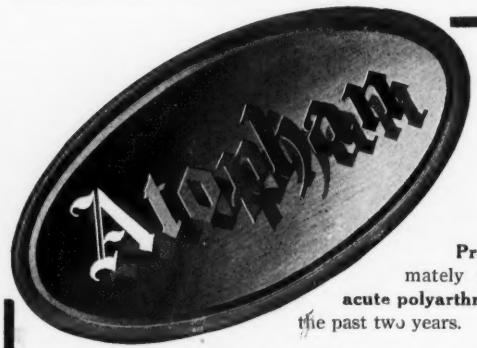

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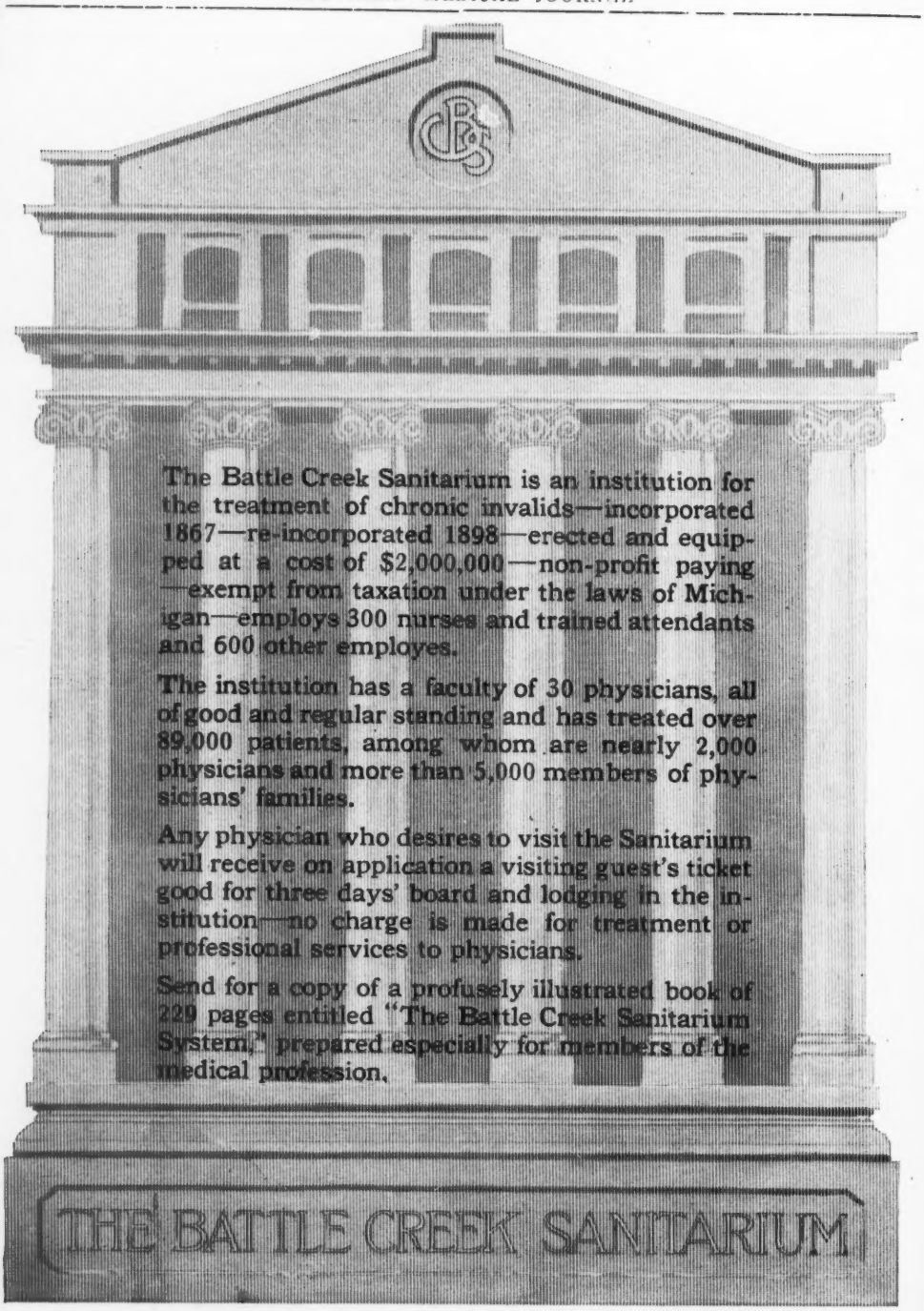
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ORIGINAL ARTICLES

SHOCK; ITS NATURE AND MANAGEMENT.*

By F. W. Parham, M.D.,
New Orleans, La.

In a moment of absent-mindedness I accepted the invitation to deliver before this body the address in surgery. While the more prudent course, prompted by a due realization of my limitations, would have promoted my comfort and saved me from much mental travail during the past months, still it has not been without a distinct feeling of pleasure that I have undertaken the performance of this duty. In any case, I assure you, however poorly I may acquit myself, that I stand here in the profound realization of the responsibility and a hearty appreciation of the honor which the well-meant kindness of your Chairman has conferred upon me.

I have selected as the topic of my address the subject of Shock, Its Nature and Its Management. It has for long been of absorbing interest to me as a surgeon, and as such I am presenting it to you today. I am not trained as a physiologist and cannot, therefore, base my statements upon any personally conducted series of experiments, but as surgeons we must, while depending upon the work of the experimental physiologists, exercise our right to examine their data and put into effect the conclusions we may legitimately draw from their consideration.

The practical problems of shock concern the surgeon and the internist as well, for we have not only surgical or traumatic shock but a toxaemic shock, coming on in the course of infectious disease. Both seek a rational explanation for the phenomena of shock and to the physiological laboratory appeal for a solution of these momentous problems.

There is, it is true, not only the physiological method of investigation but the clinical also; but the real difficulties confronting the surgeon and physician must be solved in the laboratory before he can intelligently interpret the phenomena observed and take prompt measures for the saving of life and the restoration to health.

In a preliminary survey of the field of investigation the most striking observation we make is the diversity of opinion current among not only clinicians but among experimental physiologists as well.

As Bloodgood remarks (1), it is by no means a simple problem to investigate, either experimentally in the physiological laboratory or clinically in practice. Hence, the great variation in experimental observation and interpretation and the consequent wide differences of opinion among clinicians as to the proper treatment of shock.

"The phenomena of surgical shock," says Crile, "have been familiar to physicians and laymen for many centuries and have been clinically studied and classified by many of the ancient as well as modern surgeons." "Indeed," say Tyrrell Gray and Leonard Parsons (2), "the problem of shock is one of the oldest in medicine and is still the most formidable obstacle to modern surgical endeavor. It is almost as old as 'the everlasting hills'; certainly coexistent with the existence of man." Yet neither the physiologists nor the surgeons agree among themselves concerning the causes of these phenomena, which are almost household pictures to us all.

Among surgeons this diversity of opinions is pronounced. Hardly will two surgeons be found in agreement as to all the phenomena. "On a

*Read at Public Session of the Southern Medical Association, Lexington, Ky., Nov. 19, 1913.

closer inquiry as to the foundations of belief," says Crile (3), "it is often found to have taken its origin as a tradition handed down by predecessors in a hospital service, or from master to pupil, and accepted in the same way as religion or politics." "The most striking fact with regard to this," he says, "is the contradictory methods of treatment; one surgeon gives alcohol as a routine after severe operations; another both before and after, while another never gives it. One gives digitalis, another strychnin; some give strychnin and its antagonist, nitroglycerin, at the same time. Some give hypodermic injections of ether, even if ether anaesthesia has been employed; atropin, because the circulation in the skin may be increased, thereby removing the symptom of coldness of the skin. In France ergotin is the favorite; in Germany, strychnin. Almost every known drug is given; synergists and antagonists simultaneously, while some surgeons give no drugs."

Our text-books are largely responsible for this. Many, believing as the internists do in regard to toxaemic shock, that it consists "essentially in failure or fatigue of the contractile force of the heart,"* recommend active stimulation, forgetting the oft quoted remark of Mummery: "The administration of strychnin in shock is like beating a dying horse; it may call forth an effort if we beat hard enough, but it hastens the end." Other authors, consistent in the main, lapse into strange inconsistences when giving the surgeon definite advice. Thus Mumford, that acute clinical observer and careful surgical advisor, falls into a curious inconsistency in his classic Practice of Surgery. On page 769 he says: "However the physiologists dispute as to the cause of shock, no practical surgeon, who has watched Crile's treatment of shock, can doubt its efficiency. For the last seven years I have been following his advice with satisfaction." Yet two pages further on he remarks: "However, there are frequent cases in which strychnin certainly helps to tide a patient over a long, tedious operation," evidently forgetting that Crile especially condemns strychnin in the treatment of shock (4). Bloodgood (5), accepting Crile's pathology, says: "I agree with Crile and others that strychnin and cardiac stimulants are of no value and may be injurious." We find him, however, writing in Progressive Medicine, December, 1912, page 210, as to the treatment of shock, "I know of no cardiac stimulants of any value except strophanthin," which he thinks indicated "when there is a sudden fall in blood pressure with rapid pulse." Da Costa, in his excellent text-book of surgery (Ed. 1903) while agreeing on page 195 that Crile's statement is true clinically, "that strychnin is perfectly futile in pure shock and may actually aggravate the condition," yet allows this sentence to creep in on page 196 without any qualifying remark: "Senn recommends the hypodermatic injection of sterile camphorated oil, a syringeful every fifteen minutes until reaction begins."

The American Text-Book of Surgery states in the preface to the fourth edition that of the three previous editions "nearly 40,000 copies have been disposed of." It must then have had a wide circulation among those who practiced surgery or those who intended to do so. Its authors are among the foremost surgeons of America. In the preface to the first edition, republished in the fourth, it is stated, after remarking that the proof sheets had been submitted to all the authors "for mutual criticism and revision," that "the book may therefore be said to express upon important surgical topics the consensus of opinion of the surgeons who have joined in its preparation." After quoting (on pp. 111 and 112) in **extenso** from Crile, including even the statement, "The vaso-motor center being exhausted, vaso-motor stimulants, such as strychnine, are contraindicated, since this would "lash the tired horse," and then adding, "These views, if confirmed by other experimenters, are of the utmost importance in the treatment of these frequent and dangerous conditions," yet on page 115 they advise strychnin 1-30 grain every half-hour for four doses with 1-50 grain nitroglycerin or whiskey a half ounce every hour, or one dram by needle "every fifteen minutes until reaction has been secured." In the admirable System of Surgery of Choyce and Beattie (English surgeons), published in this country in 1912, the doctrines of Crile are apparently accepted **in toto**, and his recommendations carried out in treatment, yet, on page 332, Vol. 1, some misgiving is apparent in the sentence: "In the milder forms of shock it is possible that recovery is hastened by the use of these drugs." The saving clause is, however, added, "but even that is doubtful, and their use in severe forms of shock is almost certainly harmful."

These references, which could be indefinitely multiplied, indicate sufficiently the chaotic state of the surgical mind with regard to shock.

Every surgeon here present is doubtless still experiencing in some measure the results of this unsettled pathology of shock. Often and often, while operating, have I heard the anesthetist or assistant say, "Doctor, the pulse is very weak, he

*Yandell Henderson.

needs some stimulation." It depends on the operative environment what stimulant is decided on. What have the physiologists done to get our surgical teachers into this mire and what are they doing to pull us out?

The first sign that attracts the attention of the anesthetist is the weakening pulse or irregular respiration. Drugs are not immediately thought of for the respiration, but the heart must needs be whipped up regardless of the cause.

Reviewing all the work that has been done, we find one phenomenon on which most of the investigators are agreed, "that low blood pressure is a constant accompaniment of a pronounced degree of shock,* so constant, indeed, that investigators practically always express the state of shock in terms of manometric pressure" (6). This is the starting point of the disagreement, for nearly every investigator holds some different view regarding the cause of this lowered blood pressure. "Is it due," asks Crile (7), "to exhaustion of the anatomical periphery, of the heart, of the vaso-motor center, of the cardiac center, or of the respiratory center? Is it an exhaustion or a suspension of function, or has the blood-plasma passed through the vessel walls? If it is due to exhaustion of one or more of these centers or organs would stimulation relieve the exhaustion or would an increased exhaustion follow the stimulation?" Such are some of the problems which Crile has attempted with industry and persistence rarely equalled to solve. From several series of experiments beginning in 1895 and continued to the present time, this brilliant investigator has evolved a theory of shock which has commanded the serious attention if it has not won the unqualified approval of surgeons throughout the world. His experiments and views have been published successively in Surgical Shock, 1899; Surgical Problems, 1901; Blood-pressure in Surgery, 1903; Hemorrhage and Transfusion, 1909; The Pathological Cytology of Shock, Dolley and Crile, 1909, and numerous articles in the current medical literature of America and Great Britain.

"All modern work upon shock," said Professor Yandell Henderson, in a paper read before the Johns Hopkins Medical Society, December 6, 1909, "must take its starting point from the investigations of Crile, splendid as they are in extent and thoroughness." He set the mark and much of the good work accomplished by others has been stimulated by the monumental labors of Crile.

Let me briefly, then, state the salient points in his theory of shock.

*Except the Arris and Gale Lectures on Shock.

The essential feature is a diminution of blood-pressure; this is due to gradual fatigue and final exhaustion of the vaso-motor centers; this exhaustion of the vaso-motor centers is the cumulative effect of centripetal impulses due to trauma or from the special sense or psychic regions, resulting in definite nerve-cell change and having as its most prominent manifestation a more or less rapid falling of arterial blood-pressure and accumulation in the veins. As a result of this the large veins become engorged and the heart, failing to fill properly in diastole, sends out at each systole a progressively diminishing amount of blood, until finally all vital function comes to an end. "The impairment of function in shock from injury, in exhaustion from overwork and in exhaustion from pure fear is the same" (8). "In each morphologic changes in the brain cells are produced." These conclusions were reached after numerous experiments, by the most painstaking physiological methods of exclusion of one possible factor after another in the production of shock, which it would be tedious and unnecessary here to rehearse.

Somewhat akin to Crile's theory of shock is that of Howell, Professor of Surgery at the Johns Hopkins University. His conclusions as the result of his experiments are: (1)

"1. Shock is characterized by a long-continued, low arterial pressure (vascular shock) due to partial or complete loss of activity of the vaso-constrictor center, and by a rapid, feeble heart-beat (cardiac shock) due in part at least to a partial or complete loss of activity of the cardio-inhibitory center.

"2. Cardiac shock may occur more or less independently of vascular shock, but vascular shock is always preceded or accompanied by cardiac shock.

"The physiological evidence in experimental shock indicates that the condition is due fundamentally to a strong inhibition of the medullary centers (vaso-constrictor and cardio-inhibitory), leading to a long continued suspension of activity, partial or complete."

Crile's experimental work agrees with that of Howell as to the exhaustion of the vaso-motor centers, but seems to disprove the cardio-inhibitory factor in shock. The heart, he contends, does the best it can with the material supplied from the venae cavae and only stops working when it no longer has blood to pump.

In these conclusions he has had the ardent support of Mr. Mummery, who delivered the Hunterian Lectures on Shock in 1905 (9). He follows him logically even as to the treatment recom-

mended, which he considers based on rational grounds and supported by the results of his clinical experience. A. Rendle Short, in the first issue of the British Journal of Surgery, in an excellent comprehensive critical review of the various theories of shock, after acknowledging that "surgery undoubtedly owes an immense debt to Crile's researches," goes on to say that "in spite of its fruitfulness in diagnosis and treatment, the Crile-Mummery theory is now undergoing a powerful criticism."

It is urged by a number of observers, both clinical and experimental, that

1. The arteries are not dilated but contracted in shock.

2. That the vaso-motor center is not exhausted at any stage.

J. D. Malcolm (10) attacks vigorously from the clinical and physical point of view the theory of Crile and Mummery, insisting that the peripheral vessels are violently contracted. He bases his arguments upon the cool, pale skin, the anemia of the mucous membrane, the anuria and the contracted retinal vessels, the reduced size of the radial pulse, and upon the observations that incisions during shock do not bleed and applications of heat are useful in combatting it.

Yandell Henderson (11), Porter and Quinby (12) and Seelig and Lyon all agree in the view that the vaso-motor centers are not paralyzed and that the peripheral vessels are not dilated, but respond to afferent stimulation to the last. In this view also the Arris and Gale lectures (2) concur.

As to the clinical signs of contraction these are hardly of value. Since the arteries appear small and do not bleed when cut simply because, as Crile has shown, the peripheral vessels are carrying a smaller amount of blood in shock. The same explanation holds for the cold, pale skin and for the anuria and the small retinal vessels.

Porter and Quinby in many cats stimulated for four hours the central end of the cut sciatic and failed in every instance to observe any fall in blood-pressure; only when there was a large wound or a serous cavity did any fall take place. Porter found also that the fall of blood-pressure from stimulating the depressor nerve is proportionately just as great in shock as in the normal animal. Tyrrell Gray and Parsons state that sometimes in an animal shocked by operation on the lower limbs, stimulation of the sciatic fails to cause any rise of blood-pressure, while stimulation of the brachial plexus will still do so. This they explain by assuming exhaustion of the synapses in the path from the leg to the center, but that the vaso-motor center remains intact.

Seelig and Lyon (13) carried out some experiments to show that the vaso-motor centers are not paralyzed in shock. Seelig writes: "Just as Porter claims to show explicitly that in shock the vaso-motor center is not exhausted, and, therefore, implicitly, that the peripheral vessels are not paralyzed, so we try to show explicitly that the peripheral vessels are contracted, and implicitly that not all the vaso-motor centers can be exhausted."

The experiment consisted in determining the relative time required for 5 c.c. of blood to flow from the distal end of the left cutfemoral vein, before and after cutting the left sciatic nerve, before shock, and from the right femoral vein in shock both before and after cutting the right sciatic. In the first case, that is without shock, the time required before section was seven seconds and after section five seconds, showing a cutting off of vaso-constrictor impulses to the blood vessels. After inducing shock it took nineteen seconds for 5 c.c. to flow from the vein before section, whereas the same amount was discharged in eleven seconds after section. The argument is that if the outflow from the vein in shock is greater after severance of the sciatic than previous to section, the vaso-motor center was still exercising its vaso-constrictor function in spite of the shock and was, consequently, not exhausted.

Seelig also (14) stimulated the central end of a cut vagus in a shocked animal and got a distinct rise of pressure even when both stellate ganglia were excised, showing that the vaso-motor centers were not paralyzed. Rendle Short argues that these experiments of Porter and Quinby, Seelig and Lyon, disprove the contention of Crile that the vaso-motor center is paralyzed in shock and Seelig remarks: "If the work herein detailed stands the test of confirmation, then the doctrine that shock is due to vaso-motor exhaustion must be revised."

These experiments would appear conclusive if "the complexity of the vaso-motor apparatus, with its multiplicity of centers and the seemingly independent action of many of these centers" did not leave room for error in observation. The vagus experiment seems not to have been done by Crile, but so far as we have ascertained Seelig has not yet been confirmed. As to his other experiment, the work of Bartlett (15) seems to strengthen the position of Crile. He injected salt solution into the peripheral end of the femoral artery or the splenic artery under sufficient force

to overcome any obstacle in the veins and determined the inflow in a given time before and after shock. He found the inflow in the state of shock increased by 35 per cent over that of the normal animal. Cutting the sciatic nerve in shock merely shows that the vaso-motor effect on the femoral is not annihilated.

It would appear to us, then, that the vaso-motor exhaustion theory has not by any means been disproved, though some further experimentation is demanded to establish it firmly with the profession. Professor Yandell Henderson, of Yale, is one of the strongest opponents of the Crile theory of shock, asserting that "the fact that arterial pressure was maintained until the blood stream was reduced below 40 per cent of the normal demonstrates that the vaso-motor mechanism was in a state of extreme activity in an effort to compensate the lessening output of the heart." (16). The progressive fall of blood pressure in shock is due to the diminishing output of the heart resulting from the insufficient venous supply to the heart in diastole. This is due to the breakdown of what he calls the veno-pressor mechanism. This seems not to be under any direct nervous control, but is due, he argues, to acapnia, a term devised by Mosso to express a deficiency of CO2 in the blood. The arterial blood normally contains 20 volumes per cent of oxygen and 40 per cent of CO2. Reasoning from the demonstration of Haldane and Priestly that the respiration is controlled by the CO2 content in the blood and not by the oxygen, he has as a result of his experiments developed the theory of acapnia as a cause of the fall of blood pressure in shock. "It was found that actually the sole condition determining the rate at which the animals sank into shock was the pulmonary ventilation. If we did not give them too much air the circulation was maintained at a normal pressure for many hours. If, on the other hand, the pump with which artificial respiration was supplied was worked a little too vigorously, the animals sank rapidly into shock" (17). Artificial respiration affords a means of inducing a condition similar to, if not identical with, that induced by pain. How are the fall of blood pressure and the quickened heart action to be explained?

Increase of CO2 in the blood causes increased breathing and its diminution causes slowing and finally apnoea. Pain, excitement of all kinds and rough manipulations of the exposed intestines reduces the CO2 in the blood by the increased pulmonary ventilation and acapnia results. Unless the stimulation is kept up or artificial respiration is carried on fatal apnoea comes on. If the stimulation is kept up death finally results from the insufficient supply of oxygen to the heart. If CO2 is supplied to the blood, respiration improves, the corpuscles take up more oxygen and the animal may revive if apnoea has not too long continued. Henderson agrees with Crile that there is no primary heart failure, for intravenous infusion revives the heart at once. The failure of venous pressure is the cause of the heart failure. There being insufficient blood delivered to the right heart, there is not enough to be sent out in systole. But what causes the failure of the venous flow? Acapnia, says Henderson. This has a two-fold effect on the circulation (18). 1. It diminishes the activity of the cardio-inhibitory center. 2. If the condition of arterial acapnia is prolonged, the tonus of the venous system is abolished. This is the underlying cause of the venous stagnation and is not due to a failure of the vaso-motor system. CO2 may also be lost by exposure of the intestines and warm applications increase this loss. No matter how the CO2 is lost, whether by hyperpnoea from the lungs or from the intestines, the effect is the same, loss of venous tonus and failure of the veno-pressor mechanism. Increased respiration, whether from the anesthetic or from painful afferent impulses, causes this loss of CO2, and the other effects follow.

He sums up the etiology of surgical shock thus: "Pain, hyperpnoea, acapnia, venous stasis, cardiac failure, fall of arterial pressure, except when the sequence is abbreviated by apnoea vera (19).

Rendle Short offers the following criticism of Henderson's acapnia theory:

1. His statement that the patient finally dies of lack of oxygen is inconsistent with Haldane's observation that when the oxygen breathed falls below 13 per cent of an atmosphere, "the respiratory center is governed by the quantity of oxygen in the blood, not by the CO2." The lack of oxygen, then, probably by producing acids in the tissues, would act as a stimulus to the center.

2. Hyperpnoea due to painful stimuli does not appear to be sufficient in surgical cases for the degree of acapnia necessary. The CO2 often sank from 40 to 50 per cent down to 10 per cent in Henderson's animals in a state of shock. During an operation fatal shock may come on in half an hour. Clover's inhaler ought, therefore, to render shock impossible. Although some anesthetists do recommend its use to guard against shock, it certainly cannot abolish it.

3. Short has carried out in a number of clinical cases the blood test employed by Henderson and fails to find any material difference as to CO2 content between the normal cases and the shock

cases. Five normal cases showed 46.4 per cent CO2 and five shock cases 46.9 per cent.

The views of several other investigators deserve brief consideration. Boise, in a paper read before the New York Obstetrical Society (20) took serious issue with Crile. He based his arguments upon Crile's own investigations and asserted, while not controverting the facts, that Crile had drawn from these facts the wrong conclusions. Boise endeavors to show "that the essential cause of shock is excessive sympathetic irritation, manifested mainly by a tonic contraction of the heart and arteries." He goes fully into the discussion of Crile's data, and gives his argument in detail, supported by some independent experiments of his own. If we accept this theory our whole treatment of shock would be changed, for accepting the logical indication of his theory, he recommends veratrum viride to relax the cardiac and arterial spasm. Few of us would have the hardihood to follow him to this inevitable result, knowing the pronounced effect of this powerful depressant in bringing down blood pressure.

Gray and Parsons have put forth in the Arris and Gale lectures before the Royal College of Surgeons of London in March, 1912 (21), an elaborate investigation of shock. They conclude that every nerve carries pressor and depressor fibers to the vaso-motor centers. Stimulation of the nerve at first affects chiefly the pressor fibers, which seem more easily fatigued, then the depressor fibers become involved, causing a fall of blood pressure. They believe, however, that low blood pressure is not an essential accompaniment of the clinical picture of shock, for in Lecture I, they present evidence to show "that the classical symptoms of shock occurred when the blood pressure was at the highest recorded point." They disagree with the conclusions of Dolley and Crile and insist that there is no anatomical basis of shock in altered nerve cells. The centers are not exhausted in shock. The depressor stage of shock is due to active depression and strychnin not only does not depress further, but actually converts depressor impulses into pressor. Neither nerve nor center is depressed, but the pressor synapses are fatigued, establishing the domination of the depressor impulses. Strychnin acted by restoring the pressor impulses, by opening paths of conduction across these synapses. "In an animal shocked from an operation on the trunk and the lower limbs, vaso-motor reaction becomes less and finally disappears in proportion to the degree of shock; so that finally electric stimulation of the cut central end of a dog's sciatic induces no variations in blood pressure at all." Stimulation of the central portion of the cord of a dog in this condition of shock gives rise to only a very slight rise, whilst electric stimulation of fourth ventricle causes marked rise of blood pressure and marked quickening of pulse, showing that the vaso-motor centers are not fatigued.

We will not follow them further, because their views are greatly at variance with all others and lead in our opinion to wrong methods of treatment.

Meltzer's theory, that shock is due to inhibition of all organs, appear to Rendle Short a complete abandonment of the problem of shock.

Yandell Henderson has rendered a great service by drawing attention in such a masterly way to the influence of acapnia, and Mr. Short thinks that perhaps some of the discrepancies in results of various experimenters may be accounted for in this way.

Oligaemia must not be overlooked in accounting for the phenomena of shock, but we cannot admit it as the most prominent factor until we are better able to explain how it is produced, but that further investigation may assign it to a more important position in the production of shock is not unlikely.*

We have now come to the management of shock and each of us must here, as in religion, form his own conclusions and act according to the faith that is in him. Truly here is well exemplied the words of the poet, "Knowledge comes but wisdom lingers." We have since Crile opened up the new era in shock investigation in 1889 acquired a vast deal of information, but who can say that we have arrived at ultimate truth? We must, however, adopt some plan, some working hypothesis, else we shall flounder about from one method of procedure to another until we shall find ourselves in confusion worse confounded. Can we do better than adopt the most reasonable because

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*Yandell Henderson's experiments (American Journal of Physiology, November 1, 1910, 27, p. 167), "that in traumatic shock acapnial exsanguinity develops gradually until the arterial blood stream diminishes to the point at which it is insufficient to supply the oxygen needed by the tissues. The venous blood at this time, therefore, contains little or no oxygen. The blood stream of normal life has a two-thirds factor of safety; in other words the venous blood normally contains about two-thirds as much oxygen as does the arterial. In the absence of an adequate supply of oxygen a condition of asphyxial acidosis rapidly develops in the tissues. The acid substances thus formed cause the proteins of the tissues to imbibe water from the blood in much the same manner that fibrin swells in dilute acids. Hence, the fatally rapid transudation of fluid from the blood vessels." This is essentially the view of Martin Fisher, to whom Henderson credits the explanation.

the most consistent plan in all its details? For myself I shall continue, as I have with satisfaction for some time past, to follow the suggestions of Crile, founded strictly upon his pathology of shock as above outlined.

The management of shock naturally should be considered under two heads, which I shall as briefly as possible discuss.

1. Prevention of Shock.
2. The Treatment of Shock.

In emergency surgery, of course, no time is to be lost, but in elective operations every possible means of diagnosis and methods of preoperative preparation should be resorted to. As complete an inventory of the patient as possible should be made prior to the operation. Stuart McGuire quotes Sir James Paget: "Never decide upon an operation, even of a trivial kind, without first examining the patient as to the risk of his life." The operative diagnosis is not sufficient, everything possible must be learned as to his general condition and his fitness to undergo the proposed surgical procedure, and, following Bloodgood's advice, "the vital resistance of the patient with reference to possible recovery after operation" must be estimated. Delay of operation furnishes a large mortality in acute diseases, but hardly as large as that from ill-conceived operation on improperly prepared individuals. The surgeon with good surgical judgment will, of course, make the fewest mistakes, but surgical disaster will sometimes overtake the most careful. John B. Blake has shown how difficult it is to ascertain with certainty all the conditions that may lead to sudden death. The surgeon fulfilling the full measure of Finney's good surgical judgment will give his patient all the protection in his power by a regard for all these precautions and no surgeon is mindful of his duty who is content with less.

The surgeon and the patient being thus both properly prepared, the patient ought to come to the operating table with a feeling of confidence in his surgeon and freedom from apprehension. I have now for some time past in special cases carried out the requirements as laid down by Crile in his plan of anoci-association anesthesia and I have been well satisfied with it. The preliminary morphia and scopolamine decidedly allays apprehension and the use of novocain infiltration locally certainly aids both patient and operator.*

*All surgeons and physiologists are agreed that shock may be prevented by blocking the afferent nerves. This is another great debt the surgeon owes to Crile, who proved this experimentally and clinically many years ago.—Surgical Problems, 1901.

Especially upon patients with accidental injury, in patients depressed by acute or chronic infections, in cancer of stomach and pyloric obstruction with starvation, in toxemias, exopthalmic goitre, auto-intoxication after intestinal obstruction, uremia, diabetes, obstructive jaundice and the like conditions, should operation be conducted according to these principles, in so far as practicable. The scalpel becomes then, "indeed, an instrument of most precious use—in some hands a royal sceptre, in others but a rude mattock." The perfect surgeon must have the "heart of a lion and the hand of a lady," never the "claws of a lion and the heart of a sheep" (Moynihan). Shock may be caused not only by physical violence but by psychical disturbance and anoci provides against this by the preliminary hypodermic and the measures to obtain a shockless operative field with unconsciousness maintained under the most harmless anesthetic. "To the great discoveries of Morton and Lister," remarks Sir Berkeley Moynihan, in his recent address in surgery before the British Medical Association, "this of Crile seems to be the fitting completion." Operating then with the greatest gentleness, never unnecessarily disturbing tissues that cannot be blocked, conserving every drop of blood by careful hemostasis, aspiring, as John Collins Warren remarked, "to add to modern skill the speed of a former generation," we may best secure our patient against the dangers of shock. "Speed," says Moynihan, "is essential, haste is often disastrous; the two should be distinguished. Speed should be the achievement, not the aim of an operator. His work must be thoroughly done, but being so done, then the quicker it is done the better."

But should shock be already present or develop during an operation, in spite of our efforts to prevent it, what are our resources then? I stand here an advocate of the methods of Crile until I am shown something better. I recall the closing lines of his book on Surgical Shock: **"The result of action is reaction, of rest is restoration."** Immediate cessation of manipulations, withdrawal of the anesthetic, elevation of foot of table, morphia to quiet the irritated centers with atropin to block inhibition at the heart, especially if adrenalin has been actively used, salt solution intravenously with adrenalin in great dilution continuously, subcutaneously or per rectum, pituitrin and ernutin,

and, above all, in extreme shock, direct transfusion of blood* and mechanical pressure by bandaging the extremities. If there has been hemorrhage, to these measures may be properly added the cardiac stimulant, strychnin, digitalin, camphor and especially strophanthin, but in shock never, remembering Crile's injunction that to treat shock with strychnin is as bad as treating strychnin poisoning with trauma. If hyperpnoea supervenes, the anesthetic should be at once withdrawn, and oxygen containing 8 to 10 per cent of CO2 may be begun as recommended by the Committee on Anesthesia of the American Medical Association, to prevent acapnic shock. The beneficial effects of rebreathing as recommended by Gatch should not be forgotten in this connection.

In conclusion, by correctly estimating the powers of our patient, avoiding all officious meddling, doing well but quickly what must be done, having as Sir James Paget expressed it, "the courage to do little," when to do more would be harmful, having always in mind the first object of the humane operator, the saving of life rather than the performance of a successful operation, only thus may we hope to avoid witnessing on the operating table the sad spectacle of shock, when, as Gross graphically put it, "the machinery of life has been rudely unhinged."

1. American Practice of Surgery, Vol. 1, p. 463.
2. The Arris and Gale Lectures on the Mechanism and Treatment of Shock, Br. Medical Journal, April 27, 1912, 938.
3. Blood Pressure in Surgery, 1903.
4. The Lancet, July 5, 1913, p. 10, and Surgical Shock.
5. American Practice of Surgery, p. 494.
6. Seelig, M. G., in Journal American Medical Association, January 2, 1909, 46.
7. Blood Pressure in Surgery, p. 10.
8. The Lancet, July 5, 1913, p. 8.
9. Lancet, March 18, 25, and April 1, 1905.
10. Lancet, August 26 1905.
11. American Journal of Physiology, February 1, 1909, XXIII, 362.
12. American Journal Physiology, XX, 1907-08.
13. Journal American Medical Association, January 2, 1909.
14. Surgery, Gynecology and Obstetrics, 1910, XI, 146.
15. Journal of Experimental Medicine, April, 1912, Vol. 15.
16. Acapnia and Shock, Amer. Journal of Physiology, February 1, 1909, XXIII, 362.
17. Johns Hopkins Hospital Bulletin, XXI, August, 1910, p. 238.
18. Acapnia and Shock, American Journal of Physiology, XXIII, February 1, 1909, p. 363.
19. Proceedings of the American Physiological Society, twenty-first annual meeting.
20. American Journal of Obstetrics, 1907, I, 95.
21. British Medical Journal, April and May, 1912.

*James J. Hogan has done much experimental work to show why salt solution leaves the blood-vessels. He has recently been busy with the problem of finding a proper non-poisonous colloidal solution that will remain in the circulation when injected. He thinks he has found a sterile gelatin solution which will accomplish the purpose and serve as a substitute for blood itself. He has transfused fifteen cases so far with it. It seems an ideal mixture, safe, easily prepared, and can be kept for any length of time and used when needed. The preparation is as follows:
Take of—

Gelatin (Gold Label)	250 grams
Sodium Chloride	15 grams
Distilled water	1000 c.c.

Boil together in a large, clean vessel, filter, and keep in 100 c.c. flasks. Keep in autoclave at 124 degrees C. for one hour. Add the contents of one flask (100 c.c.) to 900 c.c. per mille salt solution containing 2 grams sodium carbonate crystals. It is now ready for injection.

THE CANCER PROBLEM.*

(Chairman's Address.)

By W. A. Bryan, M. D.,
Nashville, Tenn.

Professor of Surgery and Clinical Surgery in Vanderbilt University; Chairman of the Section of Surgery Southern Medical Association.

A spade is a spade. If the mention of it by its humble name will add to the sum total of human understanding then let us without shame call it as it is. In as simple a manner I hope to present to you some facts in plain detail, for this subject, the Cancer Problem, has been chosen with a view of telling the truth, the whole truth, and nothing but the truth, so help me, God.

The reason for the necessity of such a discussion of a technical subject before an audience composed of both laymen and physicians might be required of me. You will naturally think of the matter much as if the physician were the hound and the layman the hare, in Aesop's fable. But the real reasons concern the physician and his family in the same ratio as they concern the layman: he has a personal interest in the disease, because he is as powerless to save his own from its insidious advances as was Samson, fraudulently shorn of his locks, to push down the pillars of the temple. The reasons are not far to seek. The frequency of cancer is known in a given community only to the physicians of that community, for laymen, for reasons unnecessary to

*Read at Public Session of the Southern Medical Association, Lexington, Ky., Nov. 19, 1913.

be explained here, are often ashamed or afraid to admit the truth and to permit the physician or the surgeon to say what the cause of death really was, but request him to manufacture a plausible falsehood with which to deceive the neighbors. So he says, if it was abdominal cancer, that the patient had appendicitis or intestinal obstruction; or if it was in the gullet, he says it was stricture of the oesophagus; or, if situated elsewhere, that the patient just died of a plain tumor or of hemorrhage. Thus the frequency of cancer in a given community is more or less concealed. You deceive your neighbor, and it is not very long until he deceives you with the same deception. We may not tell names and tales too. The tales interest me more tonight, so the names are prudently omitted. I can bring the subject to a much more impressive statement, if you will permit me to assume the role of a prophet of evil, and tell you that of every ten here tonight one at least will die of some form of cancer. Think of it a moment; you and your children and your children's children, one in every ten of you shall die of a disease that a leper might well despise. There is much evidence, too, to prove that cancer is on the increase, so that until more of the cause is known, the cancer problem must interest us especially along the lines from which we may seek relief.

The second reason is one which suggests itself to every victim of cancer, and one which makes us all recoil with a prayer from the thought that we shall ever have it, namely, the fatality of the disease. Every human being who permits living cancer cells to remain in his body, is doomed to die of cancer, unless some blessed intercurrent cause shall rob the cancer of its prey. The mortality of untreated cancer is one hundred per cent. There is nothing so surely fatal. This brings to mind the importance of the element of time in our solution of the problem, as will appear later.

Third—I would offer as a reason for the present study the ignorance of the vast majority of the human family on the subject. Individuals who have been taught to shun water and fire and hell-fire are permitted to pass by unheeded signboards that do most assuredly indicate the advance of a misfortune that would run the last mentioned item a close second. They do not know what cancer is, how it begins, when it begins, and how it behaves sufficiently well to cause them to seek advice in time at the hands of those who most assurecly do know.

The last reason assignable, if one may be pardoned for turning against members of one's own family, is that many members of the profession of medicine are but poorly posted on the subject of cancer, and that some few are positively innocent of anything that might be termed information on the subject of tumors in general. Others are so "Good" that they just can't tell the patient the suspicion that their rudimentary information arouses and hope and pray it is not a cancer, until the conflagration has swept the edifice, and another body is racked and tortured as never the ingenuity of man could contrive until the end comes, all through good and blessed ignorance. I am an avowed churchman, but I would like to emphasize the fact that no definite instruction is offered by the church on the etiology, pathology, symptamatology and cure of cancer. The church admits sinners and all are eligible therefore; science admits only brains that can work under high tension for long periods of time. I sometimes put it this way. Can a bad doctor be a good Christian? Let me state it plainly and briefly: When we wish information concerning cancer, let us go to a man who knows cancer, and not search for the longest set of whiskers or the baldest pate, or the man who has the largest number of fool-catchers in his armamentarium.

It may be wise at this juncture to state particularly the phases of the cancer problem. The first and probably the most important, although I seriously doubt it, would be to settle definitely the cause of cancer. I say I doubt that this is the most important, because the most intelligent explanation of the origin of cancer, the only one supported by accurately observed data, lies so very close to the intrinsic nature of cell-proliferation and variation that it is doubtful to my mind whether it would add materially to our practical solution of the situation; I doubt seriously whether additional definite knowledge of the cause could lighten the mortality or the incidence of cancer, except in so far as may be indicated by what follows.

The second phase of the problem is, then, to accept our ignorance of the cause of cancer in its present state and make our diagnoses of it at a sufficiently early stage to admit of a more satisfactory, i. e., a complete eradication of it from the tissues of its host in a larger and constantly increasing percentage of cases. This entails a two-fold requirement, namely, that the patients themselves must be informed as to the possibilities of the case and present themselves earlier to intelligent members of the profession, and cease to rely on a forlorn hope that the cause of their ailment is not cancer, and especially on the advice of that numerous host of advertising quacks

who know so little and say so much about their methods, known of all men to be unscrupulous, unclean, unjust, and unfortuate.

A diagnosis made on earlier presentation of the patients at our offices means also the necessity for more careful taking of histories, more detailed examinations, more laboratory work, more expense. The day of guessing that a possible cancer is not a real cancer belongs to the past. We can be justified in saying only that it positively is not a cancer or that it is. The tongue, the pulse, the temperature tell nothing of incipient cancer, and every adult in the land should know it. Precisely as the difficulty of recognizing the presence of cancer is greater, so also is the chance of complete and permanent cure increased, and, conversely, the more easily rcognized, the less the chance of cure.

The third phase of the problem shall be that the physician himself shall deal altogether honestly with his patron and apply the correct treatment to the case in hand, or, if he is not qualified to do so, to send at once to one who is qualified.

The fourth phase of the problem is that the laity must learn that the treatment, the successful treatment, of one form of cancer, or of cancer in one organ, or tissue, is no proof, no argument even, that another form of cancer or one situated in a different structure would be benefited by such treatment.

The treatment of this subject has now a twofold aspect, namely, by putting certain demands on the profession who assume responsibility for the lives of their patients, and by forcing upon the patients the necessity of informing themselves of certain facts which may easily reduce the annual number of those who are justly adjudged inoperable or incurable and are forced gradually to die one of the most loathsome deaths that may fall to the lot of humanity.

The demands upon the physician are manifold. He should know what he is talking about when talking of cancer, or he should cease to talk. If he does not know, he should in a frank and Christian spirit admit that he does not know. And we had as well admit here that knowledge that is as much as five years old in medicine is, likely as not, no knowledge at all, or worse than none; and he who is in the habit of relying on it should be laid off for repairs. Only too frequently does the brilliancy of a great name or the memory of a fascinating teacher stand instead of up-to-date information, and our working information should be up-to-date or labeled dangerous to the public at large.

Second, the physician, when he knows positively that cancer is present, is sometimes persuaded not to say cancer for fear of fright. He may do as he likes when the case has advanced to the hopeless stage. What they don't know doesn't hurt them. But he has no right to withhold the truth from curable cases, so long as withholding it would cause the patient to refuse or delay treatment. Would you refuse to tell a man that his coat was ablaze? Yet that is child's play to cancer. As long as secrecy was maintained toward the tubercular patient, no advancement was made in the treatment of tuberculosis; but in a quarter of a century by taking him into our confidence and eliminating fear at the beginning, the outlook for those afflicted with this disease has improved so much that it has become one of the marvelous things of the twentieth century. So the cancer case may be dealt with when he learns that there are men who know more of cancer than he does, and all fear will subside and be replaced by an intelligent co-operation in undertakings directed toward his relief.

Third—It is nowadays imperative that the physician shall run down the least suspicion of cancer and settle it one way or another. Too often we lose sight of the fact that it is no part of our business to please the public in the matter of making diagnoses, except in so far as they may be pleased to have them made correctly. And it is no less no part of our business to comfort where there is no comfort. We must know about cancer; there is no maybe, no perhaps; either it is or it is not, and the more frequently it is necessary to invoke the aid of the microscope for want of positive clinical findings, the greater the service rendered.

Fourth—The profession should cease to deal with meaningless phrases, and to employ the names of symptoms to represent disease entities. How often do we hear from laity and profession indigestion, and in the name of the English language, what does it mean? In one instance the thing called indigestion was gall-stones, in another appendicitis, in another gastric ulcer, in another constipation, in another cancer of the stomach, in another it was pancreas, in another inflammation of the stomach, in another meningitis, in another locomotor ataxia, and heaven only knows what was the cause of it in the remaining instances. Indigestion is a symptom, and yet intelligent laymen are paying their money for diagnoses of indigestion, which they know they had before they consulted the physician, whom they consider wise for having agreed with them, and who has employed the name of a symptom, the cause of which escaped him, and dignified it by giving it the im-

portance of a disease. The word congestion formerly suffered in the same way, but is at present showing signs of improvement. Indigestion is a symptom, let us diagnose the cause of it.

The fifth need in the case of physicians is to devote more attention to those conditions which so frequently result in cancer, and without which cancer would become much less frequent. Precancerous lesions will be discussed further along in this paper, and it is unnecessary to detail them here. But knowing the facts as we should, is it not but fair to deal with those cases in such a way as to shield them from cancer? How often would the application of this principle have saved cancer of the stomach, of the gall bladder, of the uterus, of the tongue and mouth. If we must deal with cancer more successfully we must deal earlier, and if early dealing is better, prevention can be designated only by superlative good. It is immaterial if we say maybe this patient with a precancerous condition will not develop cancer; if we are to reduce the incidence of cancer we must do so by removing the causes which we know precede it.

But there is far greater necessity for instruction of the laity on the subject of cancer than of the medical profession, for in the vast majority of the cases of hopeless cancer, hopeless because of delay, we are able to learn that the physician's patience had been exhausted trying to convince a willful patient of the necessity for action. The consent usually comes after the disease has fulfilled the necessarily very plain requisites to satisfy the dull diagnostic abilities of the patient himself. He desired interference only as a last resort, and last resort therapy terminates almost uniformly in death. The layman must learn certain things he does not know, and must unlearn much that he thinks he knows, before his part in the cancer problem can be performed.

There is a more or less prevalent opinion among the people that cancer is fundamentally a general disease, a "blood disease," as they are pleased to term it, and that therefore no matter how extensive local treatment may be applied it can do no ultimate good. It is true that many cancers do become disseminated through the body by the blood or otherwise at a certain stage of their development, and that then the case is hopeless; but the condition is never general from the beginning. On the contrary, cancer is just as much and just as certainly narrowly localized at the beginning as a wart or a mole or a pimple is. From this small and curable beginning it gradually invades the surrounding structures and becomes less easily curable until it passes certain limits in a local way or invades the remote parts of the body and has positively become incurable. It is important to impress here that the time division between a curable and an incurable cancer may be no longer than a single pulse-beat. A bruise, a cut, rough handling of the tumor by surgeon or patient may loosen cancer cells into the circulating blood and render hopeless the curable case of a moment before. The value of this can be seen in a practical way, for if the curable becomes incurable in the twinkling of an eye, and if the time of such occurrence is uncertain, no time should be lost in determining the nature of the malady, and having settled this point, no delay should be countenanced by patient or physician until the growth is destroyed.

The most widespread untrue belief among physicians and laymen regarding cancer is the belief that cancer is painful. Believing this, the unwary host satisfies himself easily that whatever else may be the cause of his symptoms cancer cannot be, because he has no pain. I was taught unequivocally not so many years ago that malignant tumors (including cancer) were painful, and that non-malignant tumors were painless. How many hundred thousands the grave has engulfed on account of this teaching would require an inspection of the recording angel's book. Now as a matter of fact, some of us have had the temerity to doubt the tradition, and have busied ourselves by going to headquarters on this point and asking patients who had proven cancer, some early, others advanced, whether they suffered pain. The answer is nearly always the same, namely, "No." There is nothing in a cancer cell or a group of cancer cells more than in a fat cell or an epithelial cell to produce pain, and they produce no excretion that does or can cause pain. Cancer is not intrinsically painful. As the disease advances, as complications and accidents of growth or position arise, as sensitive tissues are pressed upon, and as normal processes are interfered with, pain of greatest intensity may arise. But it is the accident, the complication that causes the pain, not the incidence or the essential behavior of cancer. Let us learn then definitely that pain has nothing to do with the diagnosis of cancer, and when pain is sought as an essential symptom the delay incurred imposes an enormous sacrifice of life.

The absence of pain and of other of the older cardinal symptoms, which surely come but always too late, necessitates that the patients must ascertain the source of vaguer symptoms, especially if persistent or recurrent, without waiting to be driven to their senses by the great symptom that drives and guides the animal orders lower in the

scale than man. We must come to be more suspicious in the irregularities in the workings of our bodies, and not be so childish as to wait for pain to force us to act.

There are certain lesions that so frequently precede, and, from the standpoint of simple truth, that so frequently cause cancer that no intelligent individual should fail to know of them, for they are curable. Cancer originates in irritated parts of the body, whether on the skin, the mucous membrane or derivations of these. They occur on the skin surface with far greater frequency if the part is exposed, hence on the face and hands; if these or other parts are especially irritated the cancers are thereby increased. Cancer of the lip in smokers, cancer of the thighs and abdomen among the Hindoos, who burn themselves with the fire baskets carried under their clothing in religious ceremonies; cancer of the tongue in tobacco chewing syphilitics, all attest the value of irritation. There is no particular reason for the cancer to prefer the thighs or abdomen of a Hindoo and to permit the rest of the nations to escape, or the tongue of a syphilitic or the lip of a smoker; it is cause and effect. And if we knew these things we might easily prevent the trouble by removing the cause; or if not, might know the possibilities of abnormal changes occurring under such circumstances. Cancer of the stomach follows ulcer of the stomach in we do not know how much more than 50 per cent of the cases, but assuredly in that precentage at least. Hence there is much more to urge the ulcer case to seek relief than the simple desire to be free of the ulcer. Cancer of the gall-bladder follows gall stones in nearly, if not quite, 100 per cent of the cases. Kocher has been reported as saying that the gall stones belong to the patient and that he may keep them if he likes. That is true. But when the patient understands that gall stones are so far as we know solely responsible for cancer of the bile passages, he will likely prefer much more often to keep them in a bottle than in his body.

The fact that cancer does not early show unmistakable signs of diagnostic value, that it indeed often shows at first no sign aside from its physical presence as a small lump, or produces obscure symptoms so vague as to offer no acceptable interpretation, must not be accepted by the people as meaning that early cancer cannot be diagnosed, for in spite of the difficulties imposed by the presentation of early cases of cancer to the diagnostician, the difficulty is seldom insurmountable if we can only remember that guesses are not admissible as evidence, and that that supreme test for the nature of a tumor, the microscope, is to be relied upon more uniformly as the cases come more early and as the symptoms so commonly known to attend upon advancing cancer are wanting. No patient should be satisfied nowadays with an opinion in a matter that involves his life, especially if that opinion relates to a possibly beginning cancer. He should expect to know the truth and demand a line of procedure that will give him the facts in the case. I have recently seen a hopeless case of malignancy (sarcoma) in a young boy, that had grown from a nodule the size of of a hazel nut to the most extensive and miserable regional invasion under the direct supervision of his physician. I do not know whether the fault lay with the physician or the family. If with the physician, it illustrates that he should have recognized the possibilities of the case; if with the family, they should have known that such a growth could rob them of their son in half a dozen months, as indeed it did. Whatever the symptoms, if they could mean cancer, let us understand definitely that the greatest hope lies in early discovery of the truth, and in immediate action if cancer is present.

The people should know that X-rays, radium and the allied therapeutic plans, while of unquestioned value in certain cases, are by no means even of remote curative value in the vast majority; that while they may entirely cure cancer of the skin, if small and shallow, they can only serve to deceive in case of deeper cancers, of whatever size, and that cancer of the mucous membrane, even when accessible, is rarely cured thereby. If a cancer is much more than one-eighth of an inch thick, X-ray efficiency is wonderfully increased by reducing the thickness to a measure less than this by the knife or the cautery. In the average case of skin cancer, which has passed the beginning stage, the better plan is to combine surgery, removing all the cells possible, with X-rays, which is intended to kill any cells that have escaped the knife. We must know that judgment is necessary here, and to be valuable it should be the judgment of an experienced student of the subject, and not that of a novice who wishes to try the efficiency of his X-ray outfit, nor yet the judgment of the patient himself.

The people should further know that all advertising doctors are fakirs, and that all magazines who permit such advertisements would do the country far less harm by blowing bank safes for the same amount; and that religious papers which tolerate such advertisements are blowing both cold and hot, admonishing their subscribers to conduct themselves uprightly in their magazine

pages and on their advertising pages urging them to sacrifice their last chance of life, urging successfully, too, or the advertisement would not continue. But it is business, they urge; yes, it is a bad business of the most groveling type. I would rather be the proprietor of a saloon, a gambling den or a high-rate money lender, honestly I would. And when the editor, whom you know, who has honored your home with a visit, who has preached the gospel and made you have such holy thoughts, when he signs his name to an indorsement of the advertising fakir, then it becomes "the most unkindest cut of all." Really what do you suppose he knows about cancer when it often tests the most learned of the profession to their utmost to recognize it? He is only becoming **particeps criminis,** by being inveigled into such a scheme by the ignorant and obscure crooks who know so little and presume to know so much, and he should be ashamed to show his countenance to a civilized community until he has done his due amount of penance in sackcloth and ashes.

THE DUTIES OF A PHYSICIAN AS A CONSULTANT TO THE ATTENDING PHYSICIAN AND TO THE PATIENT.*

By Graham E. Henson, M.D.,
Jacksonville, Fla.

I fully realize that in taking up for consideration the subject of the duties of a physician when called into consultation by his confreres, I am approaching a subject which may be easy to theorize on, but one that may be hard to discuss in a practical manner, or to be able to offer any remedies for the many existing evils that all will agree do exist in the relationship between the consultant, the attending physician and the patient. There are many in the profession who realize the futility of a consultation as oftentimes conducted; unfortunately this view is also entertained by a considerable number of the laity, and both have very good grounds for holding their views on the matter. Before proceeding further I might state that I chose this subject as a result of many impressions received during a decade as a general practitioner. It will, of course, be understood that I am considering the general practitioner in the role of a consultant, men who have no right to necessarily consider themselves the peers of those in attendance, although this unfortunately is a position often assumed by them. As a result of my impressions, I place the consulting physician in three distinct classes. Each of these represents a distinct type, as I believe most of you in a mental picture will be able to corroborate.

First, we have the physician who believes it to be his duty to whitewash the attending physician both in the matter of diagnosis and treatment instituted. It matters not how faulty either or both may be, an O. K. mark is stamped on all that the attending physician has done, and this under what is chosen to be termed medical ethics. Oftentimes this is done without much or any pretention at a diagnosis by the consultant, the word of the attending physician being taken for everything and no further effort made to draw a true pathological picture by a study of the clinical symptoms or the use of laboratory methods that might prove to be of assistance in arriving at one.

Second, is the physician who, when called into consultation, takes it upon himself to offer some suggestion, it matters not how absolutely correct the diagnosis may be or how rational the treatment instituted. This type generally try to impress the family with their superior knowledge and seem to fear that they will not be satisfied or feel that the consultation fee has not been earned unless some point in the diagnosis is attacked or some suggestions in the way of treatment are offered. This is not done under the cloak of medical ethics, but under that of the duty to the patient.

The third type represent the men who, when called into consultation, require the attending physician to give a complete history of the illness in so far as it has been possible to secure it; who go carefully over the patient, and if the diagnosis remains undetermined or in doubt, require further data—be it bedside or laboratory work. With the diagnosis completed, if it has been possible to do so, the treatment is carefully gone over; unless required, nothing is added to that already given, unless contra-indications exist for any drug that is being given; nothing is withdrawn; unless there is some actual pressing need, no additional suggestions are offered. This type, and I regret to say that I do not believe them to constitute a majority, practice the golden rule, and, as I hope to be able to show later on, do their full duty not only by the patient, but by the attending physician as well, and without doing any harm whatsoever to either client.

In considering the first type, the men who apply the whitewash, while criticising them severely, I would not deal with them harshly. It is not a hard matter to deceive ourselves as these men

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do to the point of believing that they are doing their full duty; they feel that they have done so fully by their confrere, but unfortunately the patient is entirely forgotten. Without going into a discussion of the neglect to the patient, which is self-evident, let us consider if duty is done even by the attending physician; the correction of the latter will automatically remedy the former. We all of us at times feel dissatisfied with our work and the conclusions we have deducted from it, so it is far from satisfactory under such conditions to have a consultant simply verify what we may ourselves be far from satisfied with. The responsibilities of the consultant are not to be lightly dealt with. When called to view a case, he should have, in common with all men engaged in the profession, but one object in view—it must be paramount—the welfare of the patient. All else should sink into oblivion compared with this one thought. He is not, or at least should not be, called in to bolster up the reputation of his confrere. In no other walk of life is the axiom, "Honesty is the best policy," exemplified to a greater degree than in the ranks of our profession. The men who apply this coat of whitewash are not honest to the patient, to the attending physician, or to themselves. I ask you, Is this type one that commands your respect? Will they bear favorably the earmarks of time? Are they men who will inspire you with the confidence that is so necessary when in some crisis of your professional career you desire an opinion, be it on diagnosis, treatment or prognosis? To such queries I receive an unanimous negative reply. Is not, then, the duty or even the policy of the consultant made clear? Should he not, without hesitation, express to you his unqualified opinion, if that opinion differs in the main from your own, is that not the very best reason for expressing it? And only in doing so does the consultant fulfill his obligations to all the parties concerned. It is, of course, assumed that there is good ground for such opinion; in excluding an existing diagnosis and substituting for it another; or in making suggestions for treatment, the consultant must be able to put forth other evidence than "**my** experience has shown **me**," one of the favorite weapons of the second type of consultant I propose discussing. When either diagnosis or treatment is questioned it should be as a result of carefully considered points that will at least raise a question in the mind really anxious to arrive at a true solution. The arguments must all be tenable. When advanced, they should not be accompanied by rancor or put forth in a disagreeable manner. In other words, when the consulting physician disagrees with the attending physiican, both should be open to conviction. To avoid repetition, I will discuss later the very necessary and important points of diplomacy that have to be considered in conducting consultations. It has been stated that a man to be a successful practitioner must possess at least one of the following qualifications, the **science** of medicine or the **art** of medicine. Possessing the latter includes one having the ability to favorably impress his patients, being a good mixer, of kindly disposition, sympathetic, and willing to work. When these qualifications are combined with the former —the **science** of medicine—we have the ideal physician. It is unfortunately true that of an equal number of men having but one of these qualifications, those possessing the **art** of medicine will be more uniformly successful, at least from a commercial standpoint, than those simply possessing the **science** of medicine.

The second type of consultant, those who attack the diagnosis or treatment, no matter how well established the former or how rational the latter, almost invariably are disciples of the **art** of medicine. It is not so much on diagnosis that this type will cross swords as on treatment. Being probably incompetent to make a diagnosis, they are generally content to accept any that is offered. But the dagger is thrust with innuendoes by adding some inert form of treatment, some little additional suggestion that may be hard to object to simply because of its inert character. This type have little or no scientific knowledge; are known within the profession as men of large practices but of no scientific attainment; but are considered outside the profession as a Mecca of wisdom and scientific knowledge. I have previously referred to one of their favorite weapons—"**my** experience has shown **me.**" As a matter of fact, their line of reasoning is oftentimes directly at variance with modern scientific findings. I recall a case of typhoid fever with a complicating intestinal hemorrhage; the complication was being met with calcium chloride in fifteen-grain doses. The consultant advised that this be discontinued and five drops of adrenalin, 1-1000 solution, be given in place of it. Another case of cholelithiasis—the patient refusing surgical intervention—during an exacerbation the pain was controlled with codeine. The consultant's experience was that this drug did not work well in such cases, and suggested that chloranodyne, a proprietary junk formula, be substituted. We all could record such pieces of consultant's advice by the hundreds. How are we going to deal with these men? They are the most dangerous enemies the young, earnest, hard-

working, scientific medical man has to encounter during the first few years of his practice. Gentlemen, while I will plead guilty to the charge that I may not have always done so, these men should be handled without gloves. It is true that it may require courage to do so, but the attending physician who carries out the suggestions of a consultant when he knows that his patient's interests are not fully served neglects one of his most sacred duties. It may be that diplomacy will require the acceptance of some of their harmless suggestions, but any that might prove harmful must be rejected. I do not believe that it is required that these men be accorded the protection of medical ethics. With diplomacy as our guide we do not need to hesitate in exposing the mild venom contained in suggestions that are not honest, that have not in view the progress of the patient, but rather that of the reputation of the consultant. I do not mean by this that we should stab them in the back; we should make every effort to have them see the futility of senseless suggestions; but when they remain obdurate they have thrown down the glove and we are at liberty to pick it up when we will.

It is not necessary to discuss at length the third type of consultants as I have pictured them to you, that type who do their duty and do it well. In brief they do all that the other two types neglect; their conduct is the opposite to that which we should all condemn. We then come to the question of the best and wisest manner for the consultant to conduct himself when he finds his opinions at variance with those in attendance. It is unfortunately true that there are men in the profession who look upon a dissenting opinion as an insult to their professional ability. Let such men remember that it is the big man in the profession who will most often admit that he may be in error. Let these men who do not wish to admit they even make mistakes in diagnosis get comfort and consolation in the statement made by Dr. William Mayo: "Mistakes in diagnosis are oftener the result of a lack of examination than of a lack of knowledge." It is not and need never be necessary for the consultant to conduct himself in such a manner as to leave the impression that he has superior knowledge than his confrere. With the time at my disposal it is impossible to cover in even a fractional manner the many little points which diplomacy will have to meet. As a general rule it may be stated that the consultant should refrain as much as possible from carrying on lengthy conversations with the family of the patient; let him say what he wishes to his attending confrere, and what is necessary to say to the family let it be done in the presence of the physician in charge.

To sum it all up, in considering the duties of a consultant to the attending physician and to the patient, where do we all arrive? In considering the many fine points of medical ethics, what is the one big principle that stares us in the face? Do we have to conduct ourselves as extra-corporeal beings, are we asked by those who wrote these governing laws to make superhuman effort, or is it not enough that we carry ourselves as **men**—as honest men—as gentlemen?

I would not feel that I had in any sense covered my subject if I did not in a brief way refer to the greatest blot in modern medicine, a blot that for years has been allowed to exist, possibly because there were none brave enough to attempt to wipe it out, possibly because it was not realized how large the blot is, or how uniform throughout this great profession, but one which now is universally agreed must be lifted from the pages of our history forever. I refer to the split fee. It is not my intention to discuss the common thief who demands 25 or 50 per cent of the surgeon's fee, or the lesser transgressor who, under the subterfuge of assisting at the operation, demands a certain proportion of that fee, but I do wish to say a few words concerning the man who feels that he does not receive all that he should for services rendered in diagnosticating a surgical condition, and who has resorted to the pernicious habit of collecting, from the surgeon he calls in, what in many cases is an honest fee. I say honest fee, and such it is, but I would most heartily condemn the manner of collecting it. During the last few days there have been conferred upon some several hundred gentlemen, representing the highest type of surgeons in this country, fellowships in the American College of Surgeons. They were required to sign the following declaration: "I hereby promise upon my honor as a gentleman that I will not, so long as I am a Fellow of the American College of Surgeons, practice division of fees in any form; neither will I collect fees for others referring patients to me; nor will I permit them to collect my fees for me; nor will I make joint fees with physicians or surgeons referring patients to me for operation or consultation; neither will I in any way, directly or indirectly, compensate anyone referring patients to me; nor will I utilize any man as an assistant as a subterfuge for this purpose."

I was asked a short time ago, how is the medical man going to collect, in surgical cases, the fee that rightfully belongs to him when gentlemen now holding these fellowships are the surgeons

of choice? Gentlemen, I hope and believe he is going to follow a course which, if pursued in all times past would never have necessitated the signing of such a declaration as was declared a necessary qualification for a fellowship in the American College of Surgeons. He is going to follow a course that if he had followed in all times past would never have permitted this monstrous iniquity to assume the proportions that it has. He is going to follow a course that is going to elevate the man in medicine, that is going to place him on a higher plane, that is going to place him where he will have the respect of all honest men both in and out of the profession. He is going to have enough respect for his diagnostic abilities to say to his patient, "I have determined your trouble, the condition is one calling for surgical interference," and then, having called a surgeon to do his part, is not afraid later to himself submit a bill for services rendered. If such a course had been the general custom of the past I doubt if the split fee would ever have been heard of, for it is my opinion, I regret to say, that the type I have previously referred to as common thieves evolved from the medical man who did not recognize his true worth, who had hesitancy in submitting a bill for diagnostic work. The past is gone beyond recall, lost opportunities for all time, but it should be the aim of all men engaged in the practice of medicine to so conduct the commercial aspect of their practices as to enable them to quote with full meaning and significance those immortal words of Shakespeare:

"Good name in man and woman, dear my Lord,
Is the immediate jewel of their souls:
Who steals my purse steals trash: 'tis something, nothing:
'Twas mine, 'tis his, and has been slave to thousands;
But he that filches from me my good name
Robs me of that which not enriches him,
And makes me poor indeed."

HAVE WE A SPECIALTY?*

By J. T. Searcy, M.D.,
Tuscaloosa, Ala.

The brain of man far transcends in importance every other organ in his body. It is built up into two hemispheres on afferent and efferent nerve lines, coming from and going to the opposite sides of his body. Composed of innumerable cells and fibers, with a growing complexity almost past unraveling, it is crowded into convolutions within its unyielding bony case.

Man's specialty is his brain. It so far excels in capacity the brains of all other species, that, with its use, he has encompassed the whole world and claims it all for himself. In improving his environments, he has eliminated every serious competitor, until his only rivals are his fellow men.

The associated contact with each other of increasing numbers of men, throughout the ages has accumulated in his environment a vast deal of knowledge to be acquired by the person, and complex rules of conduct to be observed. Increased brain ability and improved brain habits have been the gradually acquired results in advanced races.

A typical nerve-cell has afferent and efferent nerve fibers and is itself the center in its arc of living action. A typical "nerve-center" is an aggregate of nerve cells, and is provided with afferent and efferent nerve lines, that, also, in a living way, bring recipient action to it and carry executive action from it. Within the sphere, of which it is the center and to the limits of which its fibres extend, it adjusts its executive acts to those it has received. Indeed, the whole nervous system is composed of receptive and executive fibers with adjusting centers.

The convoluted cerebrum is the psychic-center in the nervous system. It is built on the same general principles as other nerve centers, only immensely more complex in structure and in function.

There are two departments in the nervous system; one is the "cerebro-spinal" or psychic department, of which the brain is the center, whose functions relate to the outside of the man; the other is the "sympathetic" or subpsychic department, the functions of whose center relate to organs within. All the functions of the psychic department of man, relating to his environment, adjust him, for his welfare, to the agencies around him and attempt to adjust them to him. Its functions work outside of him in these two directions.

Sentiency is a faculty belonging to all living things. It is the characteristic which distinguishes them as living. With it, they appreciate things and agencies in their environments and adjust themselves to them. It rises in grade and in complexity throughout all biology and reaches its highest exhibition in man. All living struc-

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tures of his body are more or less sentient, but the nervous system is most specialized in that way. In the "cerebro-spinal" or psychic department, the sentiency of its grand center reaches the grade of "consciousness." The sentiency of the centers of the "sympathetic" or subpsychic department is subconscious.

The large and complex psychic center relates to the environment with a correspondingly large complex system of afferent and efferent nerve fibers. It has afferent "tactile" fibers from the general surface of the body—which relate to the environment; and from each of the sense organs, of tasting, smelling, hearing, seeing, the afferent fibers are specialized to bring specific action or information into the posterior receiving tracts—relating to the environment; those of seeing and hearing are the most valuable because they extend furthest outside. It has also a large number of afferent fibers bringing a "subjective" sense of comfort or discomfort from all parts of the body. On the other side of the psychic center or department, there is a system of efferent, centrifugal, motor fibers, that carry executive mandates to the voluntary muscles; all of which relate to the environment. Almost exclusively the functions of the psychic center relate to the outside of the man. and, for his welfare, it learns, reasons and executes within his environment. Between its receptive tracts and its executive tracts there is a whole sphere of most complex convolutions engaged in adjusting ideation and reason. It has the ability to perform again previous acts in recollecting them. Knowledge consists in the number of previous acts the center can perform again or recollect. The adjusting or reasoning faculties become complex in proportion to the amount and character of knowledge. All these complexities of structure and of function have been built up, hereditarily, through a long line of succeeding generations; the last generation, by its acquired superiority, continuing itself alive today.

Repeated neuron effort and psychic exercise alone maintain the general efficiency of this most accomplished organ and it takes unusual repeated effort of a profitable kind to increase or to improve its efficiency—always perfected in the way practice is made.

The faculty of variability or adjustability, to suit the vicissitudes in the changing environments, indicates in itself an instability of results in psychic centers of persons; and produces in different individuals, and in different lines-of-descent, the normal differences we witness in psychic habits and psychic abilities.

All the functions of this organ, relating to the outside, render its exhibitions of psychic methods-of-action and capacities-for-action open to outside observation. An expert has to tell us the condition of an internal organ, but everybody claims to be a judge of the psychic abilities and habits of others—because they are open to outside observation.

In the associated contact of men with each other, because in rivalries of society it has become a necessity, all men study and judge each other in these particulars. Because there are differences and peculiarities, we look for them. There is a constant exchange of opinions, on this subject, about others. The "reputation" one bears comes from this common custom.

When the psychic differences among men are usual, customary, expected, they are what we are looking for, and noting as natural and normal; when, however, the differences are unusual, unexpected, not customary, we at once regard them as unnatural and abnormal. Normal differences among men are matters of interest; abnormal differences are matters of concern and anxiety—often the safety and welfare of the person is involved or the safety and welfare of others.

Psychic abnormalities are of two kinds, in general terms; one indicating deficiency of function, like in idiots, imbeciles or feeble-minded, so from childhood, and in dements, who, once normal, have now lost psychic ability; the other kind indicating defectiveness, like in the maniacs, the melancholiacs, the phobiacs, the paranoiacs, the hysterical, also, in the excessively immoral, irascible, untruthful, erotic, selfish, etc. The latter kinds compose the "unstable" members of society.

Some of the recent terms relating to the psychic-center are: (1) Psychology, which means the study of its normal structures and functions; (2) Psychopathy, which means the study of its abnormal structures and functions. (3) Psychiatry, which relates to the care and treatment of its psychopathic conditions. Psychiatrists have of late introduced the term (4) "psychosis," which means any grade of any kind of psychic abnormality; leaving the term (5) "insanity" to apply to those grades sufficiently grave to bring the person within the jurisdiction of a court. (6) Neurasthenia means a general weakness of the whole nervous system, in both the internal and

external departments; (7) psychasthenia means a weakness of the psychic department—of the center relating to the outside, with its afferent and efferent lines included; (8) cerebrasthenia means a weakness of the center itself. Neurasthenia, psychasthenia and cerebrasthenia are predisposing causes of all psychoses—asthenia means weakness, and weakness of structure predisposes to accident, injury, disease, faultiness, defect, and general disability of function.

A court takes cognizance of a psychosis to determine its grade, for a number of purposes. For instance: to determine whether his psychosis is sufficiently grave to absolve a person from the penalty of the law, if he has committed a crime; or sufficiently grave to commit one to a hospital for restraint, care and treatment; or to provide charitably, or with a guardian, for a person if he is not capable of caring for himself; or to invalidate one's will, contract or transfer of property; or to prevent one's marrying, voting, or testifying. To determine the grade of the psychosis is always the question before the court. Our patients have all been sent to us by a process of law—not of medicine, except sometimes in an advisory way. It is always a matter of opinion, and the opinion of the court prevails.

I have generalized on the nervous system and have emphasized the comparative size and importance of the psychic center of man to draw more decided attention to the scope and importance of our work and obligations.

Have we specialty in medicine?—is a question often implied if not directly asked. We have practically been rated as having none, by other professions, by the rest of the medical profession, and, indeed, by ourselves. We have been looked upon simply as keepers of beneficiary institutions provided by the state, without any special line of physiology or pathology to concern us. A review, however, of the programs of our late meetings will show that we are entering the field of scientific psychology and psychopathy, with reference to the psychic center, as our special field of study and investigation. We are assuming our position.

In the range of scientific psychology and psychopathy the whole field of sociology is open to us. Sociology may be said to be the study of all those means and measures that render men and women "more fit" in society, or that prevent their becoming "unfit." Fitness implies intelligence and morality. Fitness takes in the study of the qualifications of the psychic center in all the range of human mentality. Sociology, as a study, includes the factors that lead to human psychic improvement as well as to its decadence.

We are doing a vast deal of late to improve the environment, in which we and our children shall live, by improving the psychic qualifications of our fellowmen. This is the most important feature in the environment.

More than ever we are looking after the general health of the people, and the brain, being an important part of the body, is always benefited by general health. In education, by way of improving psychic faculties, we are increasing the amount and the methods of mental practice—in performing thought and in acquiring habits of thought. The amount of essential knowledge, also, in the environment, to be acquired by the scholar, is immense, and it is added to every day. We not only have more schooling provided and more schooling enforced, but there is schooling provided for all. Efforts of many kinds are made to increase the inherent psychic abilities of people and to increase the knowledge they acquire—that is, to improve their intelligence. In another line of practice, to improve the moral and ethical habits, there is more public opinion and more moral sentiment, more commendation and denunciation, more law and government, with more religious teaching.

A vast deal of effort is being expended to improve the psychic qualifications of men of civilized countries, and it is more and more a fact, that psychic qualifications are more a necessity in order to live and to excel in society. Cortical convolutions are multiplying. Intelligence and morality are increasing.

In our specialty of psychopathy and psychiatry, however, we are being "cross-fired" with urgent demands and inquiries, asking for reasons why the insane are increasing faster than the population, and, not only that extreme grade, but why all milder grades of psychic defectiveness are also increasing.

It is very positively asserted that there are more backward children in the homes. that there are more rude, fretful, peevish and nervous children. In the schools, that there are more dullards, not able to keep up with their classes, and more ill-mannered boys and more wayward girls. The juvenile courts have increasing numbers brought to them; and industrial schools and reformatories have had to be added to the correctional lists. Among the adults, there are more morons, more paupers, more tramps, more almshouse cases; the criminal courts are more occupied; men are violating laws against person and against property

in greater numbers; and more women are going into prostitution. "Vice commissions" abound, with startling reports. All the charitable and correctional organizations are diligently occupied in their work. "Social workers" are in the field everywhere. Penal institutions are calling for more room, and the states are put to, in properly handling the isolation, restraint and employment of the convicts. The hospitals for the insane have been supplemented with separate institutions for the care of the idiots, the imbeciles and the feeble-minded, with reformatories for inebriates, with epileptic colonies, with homes for the dullards, dotards and dements; still, the hospitals for the insane are demanding more room.

These efforts, along with others in civilized countries, are being used to stay the tide of human decadence. Whether inclined to take the field or not, we are every day called upon to state the causes of increasing psychic deficiency and defectiveness.

The "worry" of civilization is often cited as a cause; but in the stress of civilization it is more a symptom than a cause; worry itself, is most often an indication of psychic defectiveness and inability.

The idle classes of society are notedly the deteriorating ones. Excellence comes only, in the individual and in his lineage, after psychic effort, and deterioration follows idleness. The deteriorating idle rich and the already deteriorated poor furnish most material of this kind. This is a general proposition affecting all humanity.

By way of suggestion, I cite the following two potent factors, prevailing most in civilized countries and most of late years, as causes for psychic deterioration.

We have in medicine a list of much used drugs, which have their specific effects by their chemic action upon the recipient, afferent, sensating, conscious nerve cells and fibers of the psychic department. The most frequently used of these drugs are chloroform, ether, nitrous oxide, chloral, some coal tar products, cocaine, the solutions and the alkaloids of opium, alcohol, nicotine and caffein.

Any one of these agents in solution in the blood, making the circuit of all the structures of the body, finds, in the most delicate protoplasm of the sentient, sensitive, conscious structures, more easy, ready material for its chemic action than in less delicate structures. Because they are sensitive, sentient and conscious, as their property, their protoplasm is the most delicate in the body. Any one of these agents in the circulation obtunds this property or faculty of these structures, so that they cannot so well, or, if pushed far enough, cannot at all carry or receive sensation.

Successful anaesthesia in surgery consists in suspending, in this way with the ether, the conscious psychic center, and not administering enough to suspend the subpsychic centers of the internal department, which control the heart, lungs, etc.; if that is done, the man dies.

Enough of any one of these agents, even the less toxic, can be given to suspend the functions, not only of the psychic department, but also of the subpsychic, and kill a person. It is singular how small a dose of any one of these agents, in solution in the blood, is sufficient to chemically affect these most delicate structures.

To dull nerve sentiency, with any one of these drugs, is always a pleasurable "feeling;" to relieve discomfort is always a thing to be sought; they are always used in medicine for this purpose, namely, to render the person's sentient structures so they cannot convey discomfort or feel it. They make even the normal person "feel better." He likes the effect. The anodynes, of which cocaine is typical, seem to affect first and most the afferent sensory nerve lines, and the anaesthetics, of which choloroform is typical, to affect first and most the conscious cortex. They all chemically differ, and affect one or another part more. Enough given, however, they affect all nerve structures, in both psychic and subpsychic departments.

The repeated use of any one of these drugs has the after-effect of rendering these sentient structures more sensitive than before. It impairs them in the very direction in which its chemic action has been exerted. They are damaged in their sentiency.

Feeling or sensation being the function or faculty of the recipient structures, they are impaired by repeated use of these drugs in the way of being made more sensitive than before, more ready to be pained or discomforted, so that a sense of general discomfort follows their use—when the drug is withdrawn.

The mildest of these drugs, caffein, nicotine and alcohol, have gotten out of scientific hands and are generally used, and most used in civilized countries—as luxuries. Women and children generally, almost universally, take as a luxury, caffein from cola nuts, tea or coffee; men everywhere use caffein, nicotine and alcohol. Sometimes the more toxic, cocaine, morphine, or chloral, etc., are taken.

A condition called "drug habit" is always indicated, when the person feels general discomfort after the withdrawal of any one of these drugs, which he knows he can relieve by taking more. And the amount of his discomfort measures the amount of damage done. He drags an increasing sense of discomfort of this kind, which requires increasing doses to relieve. The psychasthenic hyperaesthesia, occasioned in this way, is a very frequent and a generally prevalent malady in civilized society. Drug "diatheses" from parents to children are inherited in this way, until society is full of over-sensitive people in increasing numbers, who take readily to the use of these drugs. They are born over-sensitive, "nervous" and "tired." The increasing consumption of these drugs in civilized countries has reached enormous proportions, and the demand is growing, for these reasons.

Psychasthenia, occasioned by drugs, is the foundation condition of many more serious conditions of the psychic center. The repeated use of these drugs often invades the highest faculties of the cortex, so that, if there is any predisposition to irascibility, pugnacity, quick temper, ill nature, nervousness, worry, mendacity, immorality, silliness, dullness, simpliicty, and the like, or to the graver psychoses, hysteria, paranoia melancholia, mania, or dementia, by the use of these drugs they are made more apparent in the external exhibitions of these persons. In this way they not only lead to all milder grades of psychoses, but also to the graver forms called "insanity." The so general use as luxuries of the less toxic of these drugs in civilized society, more than in the uncivilized, and often the use ot the stronger ones, are having their general effect in increasing psychic deficiencies and defects. That, as we take it, may be one answer to the general run of inquiries.

In my opinion, there is another generally increasing and prevailing factor that leads to psychic decadence in civilized countries.

The high-grade psychic abilities of civilized peoples, compared with others, enabled them, not only to provide better within their own borders, but to exploit the whole world for the necessaries of life and for luxuries. In every way they are more abundantly supplied; and also, they devise and enforce much better government and altruistic rules, besides educational advantages.

The psychic center is as much a matter of heredity as any other organ; possibly more so, inasmuch as it carries more recent variations than other organs, owing to its changing adjustabiilty, in meeting the complexities of the environment.

With our domestic animals, we lay great stress upon the selection of the individuals to carry into the next generation their improved qualities. Nothing is done, however, in this way to improve man's specialty, which is amenable to the same general rules of "stirpiculture." In human society, mproving psychic qualfications along lines of descent is left, without any intelligent direction, to the "survival of the fittest" principle. The sex appetite, almost altogether, leads to the mating of the sexes, without any reference to posterity.

If the physically less competent multiplied in civilized society at the same rate, or even at a less rate, than the more competent, the improved environment, better to live in, would allow more of them than before to reach adult life and to multiply. An equal valuation, also, placed on all human lives alike, which is a recent principle of civilization, allows more of the less competent to multiply. Besides that, not only do we allow equal advantages to all to survive in accordance with their several abilities, but we go further, by the extension of our charity and sentiment, and devote a great deal of our social work to the continuance and multiplication of those, who, in the ruder and cruder stages of our history, dropped out because of inefficiency. The methods of civilization, as they go nowadays, are very helpful to the multiplication of the less capable. I believe psychic deficiences and defects are increased in this way. As sociologists, we should interest ourselves in discouraging the increase of the less capable, as well as encouraging the multiplication of the more capable. Eugenics of this kind is the coming theme of sociologic study. Much popular instruction is needed. The attempted practical application of eugenics, relating to heredity, however, awakens some of the most difficult problems.

Much more could be said along the lines of human improvement and human decadence. I have time but to touch the high points in the field, to give a few headlines on the subject.

I hope, however, I have sufficiently emphasized the importance of our specialty in medicine, so as to awaken greater direct interest in the psychic center, and to show that our work embraces the largest and the most important specialty. Brain heredity, brain hygiene, with brain practice, training and instruction, can all be embraced within the limits of our specialty. We cannot properly understand psychology, psychopathy and psychiatry without studying them from these standpoints.

IN HOW FAR HAS THE DOCTRINE OF CLEANLINESS AND PUBLIC HEALTH PERMEATED THE MEDICAL PROFESSION?

By Ch. Wardell Stiles, M.D.,
Professor of Zoology, U. S. Public Health Service.

The question used as title of this short article is asked in good faith.

Cleanliness is at the very root of public health matters. Without it, there can be no such thing as a proper condition in public health.

The American medical societies have been passing numerous resolutions of late years endorsing health legislation, and it may therefore be assumed that they are prepared to set to the laity a proper example in cleanliness. Let us take a few examples, recently observed, to see whether the rank and file of the medical profession is setting a proper example.

Not long ago, the writer was invited to address a certain medical society. The invitation was accepted with pleasure. About thirty physicians attended the meeting, which was held in a public hall. We sat in a circle, around a stove. Promiscuous spitting was the rule, not the exception, and before the meeting was ended the surface of the floor enclosed by the circle was fairly covered with spittle and tobacco juice. During the meeting, various physicians present retired to the rear of the room and urinated out through the back window or back door.

Shortly afterward, an invitation came to address another medical society, a state association. There were more than 150 physicians in attendance. The meetings were held in a public hall and a number of ladies were present. The floor was converted into a common cuspidor and by the end of the session it was positively filthy.

The condition of these two rooms, when the physicians left, was worse than anything I have ever seen in more than 200 cotton mills that I have visited.

Still another medical meeting—a state medical association. The sessions were held in a hotel, the lobby of which was nicely floored with white marble. This floor was the common cuspidor for the 200 or more physicians present. One of the topics discussed was the necessity for more public health legislation.

Still a fourth medical meeting. The sessions were held in a church. The society had been in conference less than an hour when at the request of the clergyman the chairman requested the physicians to discontinue smoking and spitting on the floor.

Turning now to physicians' offices: Is it not reasonable to assume that if a physician is not very busy with professional calls, he might find time to keep his office—especially his operating or examining room—in fairly clean condition? And if he is very busy—let us say, "rushed"—with professional work, he might be able to afford to have his office cleaned, at least semi-occasionally?

Dr. A—, of M—, has a flourishing practice. He keeps an automobile and is a splendid fellow. His office reminds one of the prescription department of an average drug store, or the wings on the stage of an average theatre in a small town. This office consists of a front room, furnished with the usual furniture, all covered with dust, and a back room with operating table, instruments, shelves, wash basins, etc. Upon attempting to use a microscope, I had to open the windows, to obtain light; for the glass was so dirty. The wash basins were so dirty that I preferred not to use them. They were not clean enough to use for washing the slides. It would take the combined statements of several witnesses under oath to convince me that either room had been swept for at least three months—although the office was in daily use for consultations with the sick, and occasionally for examinations on the table, and for minor operations.

Doctor B—, in N—, has his office in the back of a drug store. He is reputed to have a good practice. He owns an automobile. I called on him to request certain information, but his office was so dirty that I did not remain to obtain it. This physician was seen, on several occasions, standing on the front step of the drug store, chewing tobacco and spitting on the steps and sidewalk.

Doctor C—, in O—, also has his office and an examining and minor operating room in the back of a drug store. I attempted to make a microscopic examination there, but it was exceedingly difficult to find a place clean enough to work in. The shelves were dirty—not to use a less complimentary term. Several physicians were in the room, and promiscuous spitting was practiced.

Doctor D—, of P—, has an extensive practice. His office is dingy, dirty, dusty, and a disgrace to any man who claims to be a gentleman.

The foregoing examples are taken absolutely at random, and could be multiplied by the score.

It is not maintained that the conditions described are to be found in the offices of all physicians, but it is maintained without hesitation that conditions as bad, or nearly as bad as these,

are to be found in the offices of about half of the physicians of the smaller towns in many states.

Now as for sanitary conditions under the control of some physicians:

Doctor E—, of Q—, is physician to a certain orphanage, that scores not over 10 on a scale of 100, in its sanitary arrangements as respects toilets.

Doctor F—, of R—, ditto, but he has seen the error of his ways and has raised the markings of his orphange to 100.

Doctor G—, of S—, is county physician and has charge of the sanitary supervision of the stockade. Although fairly well accustomed to visiting premises that are not entirely free from criticism, I cut my visit to this place as short as I could do with any degree of courtesy.

An entire book could be written upon the condition of the privy one finds at the home of the average physician in small towns and in rural districts. In by far the majority of instances I have seen, these guardians of the life of human beings have the common surface privy, open in the back, scattering soil pollution, breeding flies, and thus providing human excreta as condiment to the food consumed by themselves, their families, and their neighbors.

The conclusion is forced upon me that there is a not inconsiderable number of physicians in practice who have exceedingly elementary ideas on the subject of cleanliness.

The moral to the tale is that resolutions adopted by these gentlemen as to the necessity for any given plan of public health legislation are somewhat lacking in weight of professional authority. Some of them seem to think that the only way to bring about a public health reform—much needed as it is—in this country, is to put a physician in the President's Cabinet. Without taking any stand as to the advisability of the existence of such a cabinet official, I would suggest that a full time county health officer who will, among other things, compel these gentlemen to clean up their offices, operating rooms, and privies, and force them to stop spitting on the floor, might contribute somewhat to a reduction of the death-rate.

No physician to whom the foregoing remarks do not apply has any right to take offense at the criticisms made. The question as to whether any other physician has just ground for offense, is respectfully referred to the sick patients who are under his professional care.

A PLEA FOR THE MORE ACCURATE ADMINISTRATION OF X-RAY IN THE TREATMENT OF SKIN DISEASES AND CANCER.

By C. Augustus Simpson, M.D.,
Washington, D. C.
Associate in Dermatology, George Washington University, and Dermatologist to George Washington University Clinic.

Physicians who are familiar with the remarkable results which are being obtained with X-ray often express surprise at the apparent indifference of the lay physicians to its really wonderful powers for curing certain cutaneous and glandular diseases. This commonly pessimistic attitude of so many of our profession obviously has some foundation. Surgeons in particular are prone to express prejudice against a method of treatment whenever that method does not appeal to their surgical ideas or requires time and patience in excess of what an operation would entail. Another reason why the X-ray has not more favorably impressed medical men is that like all new methods of treatment coming into the hands of the physicians in general, it was at first improperly, grossly and unintelligently used. Enthusiasts immediately claimed for it unheard of powers. Many physicians considered their offices unequipped without an X-ray machine. It was added to the list of necessary instruments as readily as an operating table or nebulizer was installed, and with a few instructions from the impressive agent, he was now ready and over-willing to give X-ray treatments. Patients with dermatological diseases in particular suffered. Even the common lesions that failed to respond to the usual text-book prescriptions must next face the X-ray. No better evidence of the muddled state of X-ray therapy could be had than techniques the text-book writers themselves gave. It was hard to find two writers that agreed, and nearly every operator had his own particular technique, and where radiotherapy was considered at all, it was casually mentioned in the front or back of a book almost entirely devoted to picture work. Great stress was laid on such indirect and secondary measuring methods as the parallel spark gap, millampermeter, color of the tube, etc., under the impression that such methods were accurate. That many radiodtherapeutists obtained constant results seems almost unbelievable. That few did give curative and accurate radiations without

doing damage must have been due to an abundance of experience and good fortune.

The parallel spark gap and milliampermeter are both useful auxiliary instruments for determining the quality and quantity of X-ray delivered from a tube, but they are of only secondary importance when one wishes to administer accurate doses of X-ray. With the spark gap one can measure in centimeters the lesser or greater resistance in the tube to the current, and on this resistance depends the hardness of the tube, but experience teaches one that a very great fluctuation in the quality of the rays occurs even with the spark gap remaining constantly at a fixed point. With the milliamperemeter the results are even less accurate. From its position in the secondary current it does give one the total strength of the current flowing through the tube, but since this total strength is changed into various forms of energy, as heat, X-ray, etc., it is obviously impossible to estimate just the quantity that becomes available for X-ray alone. On the distance of the anode from the patient greatly depends the superficial or deep action of the rays. Heretofore this in many instances was governed by the hardness of the tube or left to the judgment of the individual operator. In computing this very important and very necessary part of the dosage one should be guided by a fixed scale, depending on the diameter of the tube selected. Without first knowing the diameter of a given tube it is impossible to estimate not the distance of the tube from the patient (a common error), but the distance of the anode or center of the tube from the patient. Much stress in the past has been laid on the color of the rays in the tube in determining its raying capacity. This is the least accurate of all auxiliary measuring methods. To describe the quality of an X-ray tube by the color of the rays in the tube without any more than a description of the tints might lead to the grossest errors. Working with such a vague color control as this, it is little wonder that so few men agreed. Having such inaccurate and indirect measuring methods, most X-ray operators hoped, by giving small doses of X-ray at short intervals to cause involution of lesions with the least possibility of producing a burn. Such a technique had many disadvantages, among which may be mentioned:

First—By allowing only short intervals between the radiations, cumulative effects were very liable to occur, especially if the disease were an obstinate one like lupus vulgaris.

Second—The patient received in the total several times the amount of X-ray necessary to produce the desired results.

Third—Frequent and long continued visits to the physician caused additional expense to the patient.

Fourth—In many cases such a long continued treatment had the effect of producing a distinct precancerous condition, and even a simple inflammatory lesion like lupus erythematous has been known to degenerate into epithelioma after such a long drawn out technique.

Fifth—This commonly found precancerous condition, following continuous X-ray treatments, renders any future plastic operation that may be necessary extremely difficult because of altered blood supply and faulty union of the grafts.

American radiotherapeutists, I think, have needlessly clung to these auxiliary and indirect measuring methods, with the result that the X-ray for therapeutic purposes is in this country a very limited and unexplored field. The light departments even in most of our large hospitals are poorly equipped to do first-class therapeutic work, and most of the work is done by physicians more interested in picture work than dermatology, with the result that a large per cent of the mediocre work is due to errors in diagnosis.

In the application of the direct measuring or massive dose method, the auxiliary and indirect methods of estimating the intensity and constancy of a tube are first used to demonstrate the usefulness of such a tube for therapeutic purposes. Unfortunately, not all X-ray tubes, even if they be suitable for picture work, entirely fulfill the requirements of a therapeutic tube. Such a tube must reach a given degree of hardness and must be so regulated as to retain that degree of hardness unaltered for at least the length of time necessary to administer an erythematous dose, and at the same time deliver such an erythematous dose in a reasonable time, say ten or twenty minutes.

Having selected a suitable tube, it is necessary to possess some means for regulating its resistance to currents and many of the newer X-ray machines now on the market have such a device. It is operated by connecting the third terminal to the vacuum regulator of the tube. After obtaining the desired hardness of the tube the third terminal is fixed at a certain point and any increased resistance in the tube is counteracted by sparkings through the third terminal, which automatically lowers the gas content of the tube, making dangerous hardness impossible. But regulating the density of the tube, measuring the in-

tensity of the secondary current by the milliamperemeter, or making use of the parallel spark gap to measure the resistance of the gas contents of the tube, while of the greatest importance, leaves one without means of accurately determining the quality of X-ray delivered by a tube, and the quantity of such a quality it takes to produce a burn.

To measure accurately the penetration or quality of ray delivered from a tube many ingenious instruments have been devised, not, however, before many manufacturers and operators suffered painful and lasting injuries. The old practice of viewing the bones of the hand through the fluoroscope was especially dangerous. The cryptoskiameter of Schmidt, in which he makes use of an incased skeleton of the hand, was one of the first instruments used to test the degree of hardness. It has since fallen into disuse because of inaccuracy. Benoist, Walters and Wehnelt have all devised penetrometers or radiochromometers, which depend on the penetration of X-ray through aluminum plates of various thicknesses, with a reading scale attached expressed in millimeters. I am in the habit of using a Wehnelt because it is more accurate, gives the operator more protection, and because of having had the benefit of instruction in its use in the X-ray clinics of Berlin. The proper degree of penetration in my experience varies, and depends on whether one is treating a malignant tumor or a simple pruritic skin disease. For superficial itchy conditions I am in the habit of employing a 5 to 7 penetration Wehnelt, while for infiltrated, deep-seated or malignant lesions, a 7 to 8 penetration Wehnelt. This opinion is by no means supported by all radiotherapeutists. Schultz, of Berlin, claims to get better results from a penetration of 7 Wehnelt in both benign and malignant lesions. For beginners, or where the diagnosis is in doubt, possibly a penetration of 7 Wehnelt should be tried. Care should be exercised not to overload the tube or too freely use the third terminal regenerator for fear of so lowering the vacuum and penetration of the tube as to make the tube useless for the time being. Remember that it is very easy to lower the penetration and resistance of an X-ray tube, but very hard and sometimes impossible to raise it after it has once become very low. Long rest or passing very mild currents through the tube over long periods of time will increase the resistance in most tubes that are too soft.

Having decided on the degree of penetration or quality one wishes to work with, it is now necessary to find how long it will take this quality of X-ray to produce the first stages of irritation or burn. For this nothing yet has been found that equals the Sabouraud-Noire radiometer or one of its modifications. It is devised on the principle that platino-cyanide of barium, as Villard first demonstrated, changes its color when exposed to X-ray. Like the penetrometers or radiochromometers, there are a number of modified radiometers now on the market. All of the reliable ones, however, are dependent on the color-changing phenomena of platino-cyanide of barium. The only improvement made on the original Sabouraud-Noire instrument is that the newer radiometers have a graded scale or several color controls, where the Sabouraud-Noire radiometer had only one. The statement made by one American radiotherapeutist, that only good results could be had by using one particular radiometer, is not correct. To be convinced of the fallacy of such a statement one has only to visit the clinics of Drs. Sequira, Schultz, Joseph and Hampson, of Berlin and London. The same operator, after dwelling on the uselessness of all the radiometers on the market but one (because of what he terms inaccuracy) mentions almost in the same breath his apparently good results with a current that varies in quantity anywhere from one-half to three-fourths of an erythematous dose. Providing the pastiles are genuine, I find with a little care and experience that it is possible to give accurate epilating doses with even the old Sabouraud-Noire instrument. The thousands of cases of tinea tonsurans and favus that have been cured in the St. Louis Hospital, Paris; the London and Queen's Hospital, of London, and the Royal University Polyclinic for Skin Diseases, of Berlin, by the old Sabouraud-Noire radiometer seems ample proof of the value of the older instruments. I think all dermatologists will agree that any method of dosage sufficiently accurate to cause epilation without any of the signs of radiodermatitis or permanent alopecia is exact enough to treat epitheliomas. I am at present using an English instrument which is graded into four colors for each epilating or erythematous dose that is not only reasonable in price, but accurate as well. By exposing a pastile covered with cyanide of barium to the action of X-ray until it changes its color from a light green to a dark green, the same tint as control pastile B of the Sabouraud-Noire radiometer, we obtain a full epilating or erythematous dose of X-ray. This corresponds to 5 Holzknecht units or No. 4 in a Hampson radiometer, providing that the pastile

is ten centimeters from the focus point of the tube instead of fifteen centimeters, as with the Sabouraud-Noire technique. To lessen the focus distance between the pastile and tube he (Hampson) attaches the pastile to the patient instead of having to contend with a special pastile holder, and at the same time the raying distance being reduced one-half, he gets his results in half the time. Extreme care should be exercised when comparing the pastile to the control to do so in the presence of carbon filament, as natural light with most of the radiometers gives an entirely wrong reading. The effect of four units, Hampson's scale, is to produce the first stages of X-ray irritation to the more sensitive epithelial structures of the skin, as sweat glands and hair follicles. It is, therefore, for this reason also known as an epilating dose. Should the exposure be continued beyond this point, the more resistant squamous epithelium of the surface suffers also.

After determining the exact dosage in quality and quantity of the X-ray tube, the third terminal regenerator is so fixed that the quality of the tube remains the same, after which accurate measuring of the ray is possible. As above stated, on the distance of the anode from the patient greatly depends the deep or superficial action of the ray; therefore, to get constant results, one has either to change and lengthen the focus distance for deep radiations (Kienbock, Holtzneck) or make use of filters of leather and lead, both of which eliminate the superficial action of the rays, at the same time allowing the deeper rays to influence the underlying tissues. Following the practice of Seibert of Berlin, I am in the habit of allowing the same distance between the tube and the patient in all cases when using the same sized tube; if necessary, making use of filters when desiring deeper penetration.

By a clock attached to the machine, it is possible to time the interval it takes to change the color of a fresh pastile to the same tint as the control-B or Sabouraud, No. 4 Hampson's, or No. 5 Holzknecht's radiometer. A convenient working tube should take from ten to twenty minutes to deliver a full epilating or erythematous dose. For convenience, say twenty minutes. This time can be divided into periods of five minutes each, so that one can give one-fourth of an erythematous dose, or five minutes; two-fourths, ten minutes; three-fourths, fifteen minutes, or four-fourths, twenty minutes, a full erythematous dose. When one considers that the effects of X-ray may range from simple stimulation to paralysis or even death of tissue cells, it is evident that there must be some division of diseases into groups. Morphologically, this has been as difficult as the classification of skin diseases by the authors. Experience, however, does prove that certain cutaneous diseases are cured with small, medium and full erythematous doses, and that while one-fourth of an erythematous dose will cause involution of one condition, it will be totally inadequate to resolve the lesions of another. Schultz of Berlin has shown that the varying sensibilities of certain tissues to X-ray is to be attributed to different specific weights of such organs. The skin, spleen, thyroids, testicle and ovaries all differ in their absorptive capacity, and it is possible that the skin affected with different pathological processes suffers by a change in its specific weight and sensibility. He also demonstrates that the low sensibility of a small number of epitheliomas to X-ray is due to their small absorption and low specific weight, which, if applied to other dermatoses, would be sufficient reason for the complete resolution of some skin lesions and the obstinacy of others to the same quality and quantity of X-ray. For this reason experience is the only guide for such a division, and I am, therefore, compelled to draw on the statistics of some of the larger skin clinics of Europe, where an abundance of material allows more opportunities for such observations. Having had the pleasure of instruction (in 1911) under Dr. Conrad Seibert, who is in charge of the X-ray department of Dr. Max Joseph's skin clinic of Berlin, I am indebted to him for the technique and scheme given below. Personal investigation has shown me that this is nearly the same method followed by most of the dermatologists and radiotherapeutists of Berlin, Paris and London. Using an interruptless machine and working with a tube which has a dose of 5½ to 7 Wehnelt in quality, and with a quantity of twenty minutes for an erythematous dose. Hampson's radiometer (pastile attached to patient) always under the control of the secondary measuring methods, as milliamperemeter, spark gap, etc., one selects those diseases which are influenced by the smaller quantities of X-ray for the first division or scheme, which we shall call a quarter of an erythematous dose, or five minutes, as:

Scheme 1.

Under exposures of five minutes in quantity and a quality of 5½ to 7 Wehnelt, one can treat chronic numular eczema, chronic eczema of the anus and vulva, seborrheic eczema, lichen planus, tinia and favus of the body and nails, psoriasis of

the body, scalp and nails, lichen chronica simplex, dermatitis herpetiformis and sycosis simplex. After the first exposure an interval of at least eight days should elapse before the second exposure, two weeks between the second and third exposure, and two weeks between the third and fourth exposure. If the condition is still uncured, the same course is to be repeated.

Scheme 2.

Under exposures of ten minutes, or one-half of an erythematous dose in quantity, and a penetration of between 7 and 8 Wehnelt in quality, one can treat all forms of tuberculosis of the skin and glands, as tuberculosis cutis verrucosa, scrofuloderm, indolent and deep-seated tuberculous glands, all forms of upus, tuberculous ulcers and erythema indurata. Blastomycosis and sporotrichosis will also respond to this dose. An interval of two weeks should elapse between the first and second, two weeks between the second and third, and three weeks between the third and fourth exposures.

Scheme 3.

Under exposures of fifteen minutes, or three-fourths of an erythematous dose in quantity, and a penetration of 7 to 8 Wehnelt in quality, can be treated tinea and favus of the scalp and nails; hyperidrosis, warts, keloid, keloidal acne, rhinophyma, rhinoscleroma, hemorrhagic sarcoma Kaposi, Hodkins disease, both forms of leukaemia, enlarged thymus, and some forms of enlarged prostate. An interval of three weeks should be between each exposure of three-fourths of an erythematous dose.

Scheme 4.

Under exposures of twenty minutes, or a full erythematous dose in quantity, and a penetration of 7 to 8 Wehnelt in quality, can be treated such malignant diseases as mycosis fungoides, sarcoma carcinoma and skin epithelioma. An interval of at least three weeks should be between each full erythematous dose of X-ray.

With such massive doses of X-ray, most of the above diseases can be easier and more quickly cured than with any other method. Especially do the tuberculous and epitheliomatous lesions respond most promptly. In tuberculosis of the skin, my experience is that I can get results (so far as cure is concerned) many times quicker and with a cosmetic perfection that compares favorably to the slower and expensive Finsen ray. The little scar that I sometimes do get in these cases I believe to be due more to the drilling and the application of carbolic acid that I give each tuberculous foci than to the X-ray. A full erythematous dose is seldom necessary to influence these cases, which makes a burn unnecessary. In the Vienna Light Hospital, where the Finsen ray is extensively used, the X-ray is applied first in cases of lupus involving large areas because of the quickness of the method, and any few obstinate remaining foci are then treated by the slower Finsen light. I saw several cases treated by Sequira of London with the drill and carbolic acid before applying the X-ray that equal any Finsen results that I saw in Vienna or Berlin. It is in the treatment of epithelioma, however, that the X-ray has probably attracted the most attention. To see well developed epitheliomas and rodent ulcers melt away under one or two massive doses of X-ray is something we are quite unused to when one is acquainted only with the results to be had with the older X-ray techniques, the application of radium, acids, etc.

There seems to be a growing enthusiasm at present for radium in America, but my experience with its results in Riehl's clinic of Vienna, the Light Hospital of that City, and Sequira's clinic of London convince me that such optimistic articles as one frequently sees are uncalled for. It is almost impossible to work intelligently with less than two thousand dollars worth of the substance, and if one should succeed in getting a cheap supply of it, the chances of getting a less active specimen will be very great. Mesothorium, a less expensive and weaker substitute, is unstable and loses its effects in the course of four or five years. From what I have seen, I certainly consider both slower, less accurate and the results poorer than those to be had by the full and massive dose method of X-ray. Radium is probably more useful in the treatment of laryngeal, pharyngeal or uterine cancer, because of the unaccessibility of the growth and the difficulty of accurately exposing such parts to the X-ray, but in surface epitheliomas one makes no mistake in choosing the X-ray as the matter of choice in preference to the slower radium treatment.

There is no better evidence of the limitations of many therapeutic measures than a knowledge of the results to be achieved with radiotherapy. To say that X-ray is curative or even beneficial in most of the cutaneous diseases is a splendid sign of excessive enthusiasm or a total lack of experience on the subject. There are any number of dermatoses to which the irritative and stimulative effects of X-ray are as harmful as the application of strong resolvents and caustics, and

it must be evident that to obtain the best results, enough knowledge of dermatology is required to eliminate intelligently those diseases which we know by experience to be unsuited for X-ray.

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1219 Connecticut Avenue, Washington, D. C.

INTRAVENOUS INJECTIONS OF STROPHANTHIN IN CARDIAC INSUFFICIENCY.*

By Thomas Truelsen, M.D.,
Tampa, Florida.

Chronic cardiac insufficiency is a condition so frequent and often so refractory that it must at all times demand our best therapeutic discipline. Our special treatment necessarily revolves itself about the cardiac muscle.

Our sheet anchor is, and always has been, digitalis, of whose use it has been said that it may be taken as an indication of the therapeutic intelligence of the practitioner, and that skill in its employment represents an enviable therapeutic accomplishment that will more often redound honor and reputation to the dispenser than the use of any other drug.

But only too frequently do we experience that all digitalis preparations given by mouth disappoint us. Some of these disappointments are no doubt due to an insufficient dosage, especially of the newer preparations for which extravagant claims are often made by the manufacturers. Disappointment is sometimes due to small doses given intentionally in the beginning of a cardiac insufficiency on the supposition that the dose of digitalis should bear a relation to the degree of the trouble. Disappointment would be less frequent in these cases if we would attempt correction with full doses and reserve the small doses to maintain the ground gained. Inferior digitalis preparations were formerly held responsible for some of our failures. Nowadays this factor may be considered a negligible one. The manufacturers have become thoroughly aware of the deplorable situation that existed some time ago. Their strife to outdo each other in giving us standard preparations and keeping them available at all times has lessened the number of our disappointments and merits our hearty encouragement.

Most of our disappointments in digitalis then are due not so much to the drug as to other factors, e. g., its oral administration and the nature of the particular case. This is often such that, try as we may, digitalis cannot be taken at all, or must be discontinued because of its failure or untoward effects produced.

But many of these wearisome cases, refractory to our best efforts along lines of ordinary digitalis medication, will still yield, and often most happily, to the intravenous injection of strophanthin. This method of specific cardiac medication was brought to the attention of the profession by Albert Fraenkel, during the Congress of Internal Medicine, which convened in Munich in 1906. His brief report was based upon cases of acute cardiac insufficiency and a single intravenous injection of strophanthin was recommended as an emergency measure only. Its success was very flattering. Within a few minutes after the injection the beneficial effects manifested themselves: the pulse rate decreased, dyspnea and cyanosis diminished, the amplitude of the pulse wave increased; and in cases of edema it was noticed that after several hours an unmistakable diuresis was well under way. These happy responses to single emergency injections were then followed up by regulation oral medication, often with the happiest results.

The success of these emergency injections in acute cardiac insufficiency soon suggested their repeated application in chronic cases that had proven refractory to the oral administration of digitalis. The first report of a series of such cases is by Hedinger (Muench. Med. Wochenschr.,

*Read before the Tampa-Hillsboro County Medical Society, July 1, 1913.

1907—No. 41). This report emanated from a sanitarium under the supervision of Fraenkel, and advocated the adaptability of repeated strophanthin injections as a means of attaining success in cases that had previously appeared almost hopeless. Since this report various clinicians and investigators have published reports on their serial injections of strophanthin, and the consensus of opinion establishes them as a valuable means of medication in many cases of cardiac insufficiency that ordinarily defy our best intentions.

The cases best suited for intravenous strophanthin injections may be grouped about as follows:

I. Acute Cardiac Insufficiency.

This serious condition with its precarious pulmonary congestion and imminent danger of pulmonary edema demands rapid remedial measures. An intravenous injection of strophanthin may be depended upon. Its greatest triumphs are achieved in these cases. The rapidity with which it forcibly stimulates the embarrassed heart has been repeatedly responsible for changing an alarming and dangerous condition into one of hopefulness and subserviency.

These statements do not apply to cardiac failure during the course of infections. The increasing pulse rate and the falling blood pressure in some of these severer cases are not stemmed by strophanthin. In explaining this inactivity of strophanthin some suggest that the toxins of the infectious process have involved the whole heart muscle in a degenerative process to such an extent that not enough muscle remains capable of reacting to the stimulus. Others maintain that a paresis of the vasomotor center is the cause of the cardiac failure in these cases and therefore the explanation of the inactivity of the strophanthin injections.

II. Chronic Cardiac Insufficiency.

In this group I wish to call your attention especially to the cases in which the cardiac insufficiency manifests itself more particularly in an enlarged liver and in gastro-intestinal disturbances —the so-called hepatic form of cardiac insufficiency. These are the cases that oftener than any other present difficulties when we attempt the oral administration of digitalis. Sometimes the condition of the stomach is such that it refuses even a small dose of digitalis. At other times, even with gastric tolerance, we fail to get the desired response probably because the congested condition of the stomach, intestines, and liver is responsible for the interference with the necessary physiologic processes. The strophanthin injections may be used in these cases as an initiative measure, that is, only long enough to permit the oral administration of digitalis with benefit, or they may be depended upon during the whole course of the treatment with equal satisfaction.

In these two forms of cardiac insufficiency just described, the acute and the hepatic form of the chronic variety, the indication for strophanthin intravenously is an absolute one, and its use will often be a life-saver. In the other cases of chronic and sub-acute insufficiencies, cases that usually respond quite satisfactorily to the oral administration of digitalis, the indication for the use of stropthanthin is only a relative one, and the employment of the injections may be left to the discretion of the attending physician or to the decision of the patient.

III. Cardiac Insufficiency Combined with Renal Insufficiency.

These cases often offer diagnostic difficulties. Their clinical aspect does not indicate whether to make the cardiac or the renal insufficiency responsible for the condition presented, nor which we shall support especially with our therapy. Practice has sanctioned the combination of cardiac tonics and diuretics in these cases partly because of the difficulty of arriving at a correct diagnosis, and partly because of the well-known fact that the action of diuretics is supplemented by cardiac support.

An intravenous injection of strophanthin in these cases will often clear up our diagnostic difficulty, and indicate the main line of treatment. If it is found that the patient responds with a decided increase in the quantity of urine passed we may safely assert that the cardiac insufficiency is mainly responsible for the condition present, and place our main dependence upon the continuance of cardiac support. If, on the other hand, a diuresis does not follow the intravenous injection of strophanthin, then we may safely make the patient's renal insufficiency primarily responsible for the clinical entity and place our reliance chiefly on diuretics, supplementing their action by an occasional intravenous injection of strophanthin to good advantage.

Dosage.

The initial injection of strophanthin is a tentative one, and should not exceed .5 mg. A lower initial dose must be employed if the injecton follows digitalis medication. Also three to four days must be allowed to elapse before giving this injection under these circumstances. If it can be ascertained that pulse, respiration and diuresis are favorably influenced, even though it be slightly and for a short time only, then one is justified in expecting from subsequent larger injections a repetition and augmentation and a continuance of

its specific action. In some cases the initial injection will fail to show measurable improvement upon pulse, respiration and diuresis, but the subjective improvement, as relief from dyspnea or oppression, or a natural, refreshing sleep, etc., will warrant repeated and increased injections. In order to prevent cumulative effects, injections must not be repeated within twenty-four hours. A safe rule regarding repetitions is not to make another injection until the benefits obtained from the previous one are no longer maintained. During the earlier period of the course three to four injections a week; later perhaps only one will be found necessary. The average does is 1 mg. and should only be exceeded in full realization that one is using a powerful drug.

PROCTOCLYSIS—AN EXPERIMENTAL AND CLINICAL STUDY.

By Dr. Hugh H. Trout,
Roanoke, Va.

The results of our study of proctoclysis have been previously reported on two occasions and the discussion following each lead us to the belief that the subject is one of far more practical importance than first glance would indicate.

At the suggestion of one of my associates, Dr. George B. Lawson, we started employing plain tap water instead of normal saline solution per rectum in our post-operative peritonitis cases, but in a short time we saw the marked improvement and then began a comparative study of the two solutions in every case in which the rectum could be employed. In this manner the present series covers a few less than 2,500 patients, 1,000 of whom were given normal saline solution per rectum and about 1,500 plain tap water. So firmly convinced have we been of the many advantages of the tap water over the saline, we have employed normal salt solution in but few of the last five hundred patients in the hospital. So in this manner we have 1,000 cases taking tap water and 1,000 having normal saline solution per rectum, and both covering the same period of time, with an additional five hundred taking water per rectum during a different period of time.

The manner in which this study is made is to alternate the cases as they leave the operating room, irrespective of the case, and it is interesting to note how evenly these cases balanced one another in the final summary.

Of course, in operations on the rectum and perineum it is impractical to employ proctoclysis.

This series includes the vast majority of all operations of surgery and gynecology.

Early in our work we found if an S. S. enema was given before operation and the rectum cleansed, the patient absorbed more fluid with less irritation than if the enema was omitted.

At first we tried the hard rubber plug and the method described by Murphy in the Journal of the A. M. A., April 17, 1909, but found we could only employ the nozzle in those cases whose resisting power was so lowered they did not notice the discomfort the plug created. We have found a small soft rubber catheter far more satisfactory to every one concerned, especially the patient. The visible dropper first described in the Journal of the A. M. A. by Lawson, 1908, along with a screw clamp, gives the nurse easy control of the flow and allows an exact estimate of the amount of fluid going into the rectum. If at any time the patient should complain of the fluid in the rectum, simply closing the pinch cock stops the flow, and the catheter is so small it is very seldom the patient even knows of its presence.

In order to increase absorption and lessen the chances of irritation, the fluid should be of a little higher temperature than that of the body.

There are many kinds of apparatus on the market, employing the principle of the thermos bottle, but the fluid cools very rapidly in the tube on the way to the rectum. We have found one of the most satisfactory ways is to allow the tube to lie between two hot water bags—these being placed about six inches from the rectum. It is hardly necessary to mention the importance of not allowing the bags to come in contact with the patient. Of course, the most satisfactory apparatus for keeping the fluid at the right temperature is an electrically heated one described by Elbrecht, but it is necessarily somewhat expensive.

To describe all the apparatus in the literature during the past six years would in itself constitute a long paper.

The anaesthetics have been nitrous oxide and oxygen, ether and chloroform separately and in various combinations, as well as cocaine.

We have not been able to introduce the large amounts of water or normal saline solution such as Dr. Murphy reports, nine quarts in twenty-four hours, except in a few of our drainage cases, and in patients whose resistent power was so lowered the hard rubber plug was not painful.

The average amount of water taken in twenty-four hours was about 3,000 c. c., and the average amount of salt solution taken in twenty-four hours

less than 2,500 c. c. The average amount of urine in the water cases in twenty-four hours was 825 c. c. The average amount of urine in the salt cases was 575 c. c. In other words, the patients having water by rectum absorbed 500 c. c. more fluid and secreted 150 c. c. more urine in twenty-four hours.

Inquiry has been made of most of the larger hospitals in this country both as to the method of preparing normal saline solution as well as their reasons for using the same in the place of plain tap water for proctoclysis. Replies were received from two hundred and thirty-two hospitals, and the manner of preparation varies from careful attention to the most minute detail, and containing potassium, calcium and sodium chloride in varying proportions, filtered and sterilized, to the simple placing of two teaspoonfuls of table salt to one quart of tap water. In other words, the replies show there is no uniformity in preparation, and in most of them the solution is not isotonic with blood. A teaspoonful of salt may be anything from 115 grains to 270 grains, depending upon whether it is a "heaping," level or anything in between the two.

Taking a series of tubes, each containing 2 c. c. of sodium chloride solution of strengths varying from .1 to 5 per cent. and placing in each one drop of blood, we find hemolysis to occur very sharply at two limits. The lower being between .50 and .55 per cent; the higher being between 1.1 and 1.2 per cent. Apparently hemolysis takes place at the lower limit by first liberating the haemoglobin and then followed by the destruction of the cell, while at the upper limit there is first crenation and finally destruction of the cell. Mention of this is simply made to call attention to the fact of so many solutions being employed intravenously which are far removed from safe limits. This statement is based on the replies from a number of hospitals, indicating the employment of the same strength solutions intravenously as by rectum.

Following the directions of preparations given by the majority and using the amount of fluid said to be absorbed from the rectum by many, we would be forcing into an already weakened patient in the space of twenty-four hours the average amount of salt consumed as a condiment by a normal man in one month. Some replies contend salt solution is less irritating to the rectum, but we find the reverse to be true.

The vast majority of the replies indicate the necessity for a chemical similarity or isotonicity with blood. Of course, if osmosis plays any part in absorption from the rectum, which the majority of authorities deny, the higher the tonicity of the blood and the lower that of the solution, the quicker will the solution be absorbed.

We have now employed water in about fifteen hundred cases, and in no case have we been able to see anything to indicate a destruction or irritation of the rectal epithelium.

Even we surgeons know of the wonderful improvement in some patients with nephritis when placed on a salt-free diet, and all of us realize there is a transient renal irritation or possibly a true nephritis following the majority of anaesthetics and infections. In seven cases in our series the following coincidence has been observed A transient albuminuria remaining in every specimen for two days after an anaesthetic when using salt per rectum. Water was then substituted, and at the end of twenty-four hours the albumen had disappeared. At this time a return was made to salt solution, with the appearance of albumen and a few hyaline casts in from six to twenty-four hours. Patients were then placed on a limited salt diet and the urine in every case promptly returned to normal and remained so until discharged from the hospital. In none of these cases was there any oedema, and neither the alkalinity nor the acidity of the urine altered with the change of fluid per rectum.

Several surgeons report oedema of the ankles, hands, and even the face after saline per rectum, and one goes further by stating this is due to upsetting the circulatory equilibrium. Our observations convince us this oedema is more apt to be due to the enormous amount of salt forced into the body than to any defect or unbalancing of the circulatory apparatus—unless there be an associated cardiac lesion.

There have been seventy-two cases not showing albumen in urine before operation, but showing a transient albuminuria after operation lasting from one to eight days. Of the salt cases, there were sixty-one. Of the water cases, there were eleven. In none of these cases was there marked increase of blood pressure.

An attempt was made to ascertain if there was any difference in either the time of appearance or amount recovered after giving a hypodermic of pheno-sulphophthalein (Geherty-Roundtree method) after first obtaining what was apparently normal for that individual patient and then giving water and later salt solution by rectum, and vice versa. In all our cases both factors remained practically constant, but our experience

is too limited to justify any final deductions on this point.

There has been so much work published on the association of sodium chloride and nephritis that to follow this would lead us far from the subject, and to those who are interested in the experimental side of this question, they are referred to the reports from the laboratory of the Department of the Theory and Practice of Physic, Medical School, Harvard University, and especially to the work of Christian, Smith and Walker.

In addition to this there are the numerous reports from Dr. Martin H. Fischer on his colloidchemical views concerning nephritis, but the practice of relieving thirst by adminstration of water is apt to continue in spite of all theories to the contrary, and this paper is not intended to deal with either the etiology or treatment of nephritis.

The estimation of the sodium chloride content both in blood and urine presents too many uncertainties to be of any practical value.

In a number of drainage cases, in which the drains extend either from the pelvis to the abdomen or from the pelvis through the vagina, or both ways, have been given methylene blue by rectum in strength frof five to twenty grains to the 1,000 c. c., and in not a single one has there been any stain on the dressings, although in all cases the urine showed its presence markedly in from three to six hours. It is rather interesting to note when the gall bladder is drained by a tube and the peritoneal cavity protected by drainage below the gall bladder, methylene blue appears in about ten hours in the bile, through the tube, while there is no stain on the cigarette drains

The giving of urotropin (Hexamethylene-tetramine) by rectum presents too many uncertainties in its recovery from secretions to be of any practical importance, though the internes of the hospital have the impression, which is not as yet based on any comparative study, the duration of the drainage from an infected gall bladder is materially lessened; certain it is, in a series of fifteen such cases pus diappeared from the bile in less than forty-eight hours after starting urotropin per rectum, but whether this was a coincidence or result, we are not now prepared to state.

This drug given by rectum does not in any manner irritate this organ or upset the stomach, and if it has any value, this manner of giving it is convenient and less apt to be harmful to the patient.

Unfortunately for us, public prejudice is such in Roanoke as not to permit of any extensive animal experimentation.

Personally, we believe surgeons have simply drifted into employing salt solution by rectum without giving any serious consideration to what they were doing and such is our excuse for this paper.

In this entire series in both the salt and water cases there have only been 161 who complained of being thirsty, and of this number 112 of them were salt cases. In other words, there were 112 who complained of thirst in a series of 1,000 cases given normal saline solution, and only forty-nine out of 1,500 given water per rectum who complained of thirst; or to express it in percentage, 11.2 per cent of the salt series against 3.2 per cent of the water. There were thirty-one, or over one-fourth of these cases, complained of tasting salt when they had absolutely no way to know they were being given saline by rectum, and the solution being prepared so as to be six-tenths to nine-tenths per cent sodium chloride, and none of the water cases had a similar complaint.

All the salt cases have required over twice the amount of water to relieve thirst after the starting of fluids by mouth and continuing proctoclysis.

In addition to this, nausea has been decidedly more in the salt cases.

There have been seventy-two cases who have been previously operated upon one or more times in other hospitals, and they have all commented, without suggestion, on the absence of thirst and decrease in nausea which were the prominent features of the previous operation from the patients' viewpoint. Of this series, forty-eight were given water and twenty-six salt solution per rectum.

During the time of this series there have been 298 operations upon the rectum and perineum which have been under exactly the same routine, with the exception of not employing proctoclysis, and all except fifty-five have complained bitterly of thirst.

We can see no more reason for the giving of salt solution by rectum to prevent and relieve thirst than we can for its employment by mouth under like conditions, and furthermore, have noticed, when given by rectum, it sometimes produces the same nauseating and slightly toxic effects it does after drinking.

There have been two cases reported in literature which have terminated fatally by employing a strong stock solution of sodium chloride, carelessly substituted for the physiologic solution, and Evans reports two additional cases in which death was actually produced by the use of the physiologic salt solution.

It is true sodium chloride is the least toxic of the group of similar metal chlorides, but even at that it is a poison to all people when given in large doses, and occasionally very toxic in small doses to a certain class of cases, and we believe this peculiarity is apt to be present in patients whose resisting powers are lowered by operations and infections.

Certainly our observations convince us this is not only a theoretical, but a most practical fact, and one worthy of more consideration than has been usually given to it in the past.

Finally, we know the giving of fluid by rectum meets Nature's post-operative demand for the relief of thirst in a simple, effective and harmless manner, and to those of us who have been operated upon, no other comment is necessary; to those who listen daily to the patients' pleas for water, let us give it to them without salt—not by mouth, but by rectum, where, if properly given, it will be retained and give relief from thirst and lessen nausea.

ANESTHETICS.

By P. O. Chaudron, M.D., Ph.G.,
Dothan, Ala.

The object of this paper is not a minute description of any special anesthetic, its administration, detailed indications and contraindications, complications, etc., but is simply a review of anesthetics and a few points that may be of interest in a general way.

"It is generally understood that we owe the term 'anesthesia' and the adjective 'anesthetic' to the genius of Dr. Oliver Wendell Holmes, who suggested their use to Dr. Morton. The term anesthesia is applies to the artificial loss or deprivation of all sensation, which may be either local or general. It should be distinguished from analgesia, which means simply freedom from pain, consciousness being retained. In this respect local anesthesia is really local analgesia, although the terms are confused in this regard."

While anesthesia in its present sense is truly an American discovery, still in its less restricted sense, the effect of narcotics and intoxicants has been known for centuries. The peculiar effects of many vegetable narcotic drugs have been "rehearsed in prose, sung in poetry, and known from almost prehistoric times." Ulysses and his companions were stupified by nepenthe; hemlock has been celebrated since the days of Socrates; the Chinese and Indians have made hasheesh famous. Velpeau, as late as 1839, wrote: "To escape pain in surgical operations is a chimera which we are not permitted to look for in our time;" yet about the same time the anesthetic powers of both ether and chloroform were discovered.

Anesthetics are, for convenience, usually divided into general and local, according to their effect upon the body as a whole or in part.

Under the head of general anesthetics may be mentioned, chloroform, ether, nitrous oxide, amylene, chloral hydrate, ethylene chloride, ethyl bromide, etc.

Of the local anesthetics, cocaine is most commonly used, while eucaine, holocain, stovain, ether and rhigolene spray, urea and quinin hydrochlorid, alcohol, phenol, magnesium sulphate, menthol, sterile water, heat and cold have their special indications and uses. Often two or more anesthetics are mixed, either for local or general use, but in these instances "the combined action of the different drugs is by no means the sum of their separate actions."

The modes of administering anesthetics are varied, i. e., inhalation, insufflation, en-and- hypodermic and intramuscular injections, intravenous, rectal, topical, nerve blocking, spinal and per mouth. However, each method has its uses, advocates, advantages and drawbacks. Under all circumstances the drugs should be procured from responsible chemists, for tests often show impurities and adulterations.

Anesthesia is produced by a more or less profound depression or paralysis of the cerebral and spinal nerve centers, varying from a first stage of cerebral excitement to one of insensibility, loss of consciousness, muscular relaxation, abolition of reflexes and paralysis of the nerve centers, with the exception of those of respiration and circulation. It may be carried to the point of narcosis, suspension of respiration and cardiac action, asphyxiation, syncope and death.

Ordinarily an anesthetic is best given with the patient on the operating table, but in some instances the bed will prove better.

Careful examination should be made of the lungs, liver, spleen, heart and circulatory system. The urine should be examined chemically and microscopically, and when findings indicate the advisability, cystoscopic examination of the bladder and ureteral catheterization, with drainage of the pelves of the kidneys, should be done.

The character and habits of the patient should be considered before selecting the anesthetic; for neurotics, drunkards and drug habitues invariably prove hard subjects, resisting the anesthetic,

breathing heavily and forcing the intestines down upon the field in abdominal operations.

The surgeon should acquaint himself with the patient's condition before ordering the anesthetic.

After the examination assure the patient that he is free from danger. This has a beneficial mental effect. Avoid discussing the deleterious effects of anesthetics. Explain the nature and immediate effect and action of the anesthetic, that it may prove disagreeable at first, but that they will soon become accustomed to it. Do not exhort patients to "breathe deeply." This error is often made. Tell them to "breathe naturally." "Blow the anesthetic away," or "count fifty out loud." Having them clasp their hands upon the chest and telling them to "press tighter and tighter," and that this will help them go to sleep, will be found to work admirably well in some cases.

The head should be on a level with or slightly lower than the spine. In England, especially in obstetrical and gynecological cases, the left side is preferred during the anesthetic.

Have the room quiet and comfortably warm, as well as the patient, for the sweating and evaporation coincident with an anesthetic favor lung affections. As a matter of fact, a large number of respiratory difficulties after etherization are due to exposure to cold, and very slightly, if at all, to the ether. This is a fact overlooked to an extent which is almost criminal in its negligence.

An anesthetic is desirable for sensitive people, and permits of examination where there is doubt as to pelvic conditions and allows the full attention to be concentrated upon the work without detraction on account of pain. "In women, exposure of the body must be guarded against as much as possible, out of respect for the sex, because of the sacred obligation to treat her with the deference due her in return for her confidence in her physician, and on account of the demoralizing effect of careless indifference upon nurses and assistants." No person not directly interested, professionally or otherwise, should be present, yet it is advisable to always have a third party witness.

In operative procedure be sure that the patient is fully anesthetized, otherwise time is lost and the shock is increased.

The anesthetic, whatever it may be, should be given slowly, until the patient becomes accustomed to it, then it may be given more rapidly, being governed by the kind used. The patient is bewildered, face flushed, respiration increased, pulse slightly accelerated and stimulated, and the senses obtunded. During the "primary anesthesia" such operations as opening an abscess, paracentesis, dilating the sphincter or curetting adenoids can be performed without pain and with prompt recovery. The stages of excitement and relaxation follow.

Chloroform, combined with oxygen, is about as safe as ether, probably safer, although alone its mortality rate is higher. It acts quicker, and produces less nausea, making it desirable for obstetrical practice. During labor there is little or no danger to the fetus unless it is long continued. It is better for the old and very young and for quick operations, and in examining females.

Chloroform is not contra-indicated in valvular lesions where there is good compensation. However, the heart and vessels should be examined for valvular lesions, fatty degeneration, myocarditis and endocarditis, atheroma, aneurysms, etc., when, if conditions demand, it should be replaced by some other anesthetic, or used with great caution.

I agree with Park in that, **"when administered by a thoroughly competent person,** chloroform is safer than ether, and usually preferred." So largely does the personal equation figure in this consideration that it seems unnecessary to produce statistics.

Chloroform may be used where ether has failed or where there is a record of trouble with a previous etherization. Some anesthetists start with chloroform and end with ether. Changes from ether to chloroform should be made very gradually, but when the patient has had primary medication with morphine and atropine, and the anesthesia is initiated with chloroform until after the stage of excitement, switching to ether may be done with very little danger.

Chloroform should be kept in small, dark, well-stoppered bottles. In the presence of fire it decomposes into hydochloric acid and chlorine gas. When exposed to light and heat, oxidation will not occur if water is excluded, but absolute exclusion of moisture seems to be impossible. The oxidation products of anesthetic chloroform are primarily the oxidation products of alcohol contained therein, and no decomposition of the chloroform occurs while the oxidation of the alcohol proceeds.

Chloroform kills probably by destroying the contractile power of the cardiac muscle when it reaches it in sufficiently concentrated form. This brings up the necessity of watching for the dusky and congested appearance of the face, the stertorous breathing, which should not be confused with snoring, and the closure of the glottis, for in such cases the absorption is greater, as the blood passes through the lung slower, the heart receiving blood

overcharged with chloroform. Usually this occurs in a fatty heart, or one with aortic or mitral lesions.

Ether exposed to sunlight and air will contain peroxidized compounds, initiated by the formation of hydrogen dioxide, which seriously affects the result of etherization, causing coughing, suffocation, and undesirable after effects. It should be kept in air-tight containers, the contents of which should be used at one sitting.

A few drops of ether will usually overcome very quickly the shallow breathing sometimes observed with chloroform.

A small quantity of alcohol with ether prevents too rapid volatilization and consequent chilling of the apparatus with which the ether is being administered, and lowers the freezing point of the condensed moisture of the breath.

Gwathmey suggests the following as being ideal:

"Preliminary medication with morphine and atropine.

"Commence anesthetic with two to four drops of essence of orange, 25 per cent (U. S. P.).

"Drop method of anesthol (a fragrant anesthetic made from oil of fennel and anise), until the patient reaches surgical anesthesia, then change to the drop method of ether, and replacing this by some form of vapor anesthesia, meaning the administration of an anesthetic by passing air or oxygen through or over the anesthetic used."

Ether kills usually by asphyxiation and not by syncope, therefore the pulse may keep up even after the patient has ceased to breathe. Rarely, however, in case of heart lesions, the reverse is true. This emphasizes the necessity of watching the respiration and pulse with equal care.

Ethyl bromide is a good general anesthetic for small, quick operations, and as a preliminary to ether. However, it does not cause sufficient muscular relaxation, hence is not desirable for pharyngeal and laryngeal work.

Nitrous oxide gas is fast becoming more popular for examinations and for short and long operations. Prince, of Birmingham, uses it almost exclusively. Boothby believes that while nitrous-oxide anesthesia is far more difficult to conduct safely and satisfactorily than ordinary ether, and requires large experience and costly apparatus, yet when mastered, it is at present the best method.

Intratracheal insufflation of ether has many points of vantage. Its general field of usefulness is in thoracic surgery, in operations where the anesthetist is in the way of the operator, or where the position of the patient makes the administering of an anesthetic very awkward, as in goitre, operations on the base of the skull, kidney, ureters, oral and nasal cavities; in obstructions to the upper air passages and in the aged and feeble. In fecal vomiting and excessive mucus the return flow of air prevents inhalation, with an otherwise aspiration pneumonia.

Allen reports 320 cases of spinal anesthesia. Discarding cocaine as unsafe, he uses stovain, eucaine or tropo-cocain in combination with epinephrin. More satisfactory results are obtained when the anesthetic is combined with epinephrin, which is used in solution of from 1:10,000 to 1:1,000. Jonnesco uses stovain combined with strychnin nitrate, injected anywhere along the spinal canal, with practically no danger to the patient.

Gauss uses solutions of scopolamin and morphine during labor, and states that hypnosis can be maintained for several days without danger to the mother or child. Other observers have not been so successful.

Ether, also rhigolene, is used as a local anesthetic by spraying it in a fine vapor with an atomizer upon the field. At first the part turns red, then pale and frosty when anesthesia is complete. A little vaseline smeared on the part before using the spray will prevent irritation. Good judgment should be used in the employment of these anesthetics, for in certain tissues, among which may be mentioned the scrotum, a slough may result from their use.

Ethyl chlorid acts like the above, and is a very handy anesthetic in circumcisions, adenoid curettments, cauterizing venereal warts, opening abscesses, etc. It is often used as a preliminary to ether, and may at times with advantage be continued as a general anesthetic.

Mathews uses ether 15 parts, chloroform 10 parts, menthol 1 part, as a spray for local anesthesia in work on the anus. The mixture is sprayed on for one or two minutes, and it deadens the tissue for five or six minutes. It is, however, irritating to the mucous membranes.

Cocaine is a familiar anesthetic, and one which is often used very carelessly. It is usually used in too strong solutions. One-quarter to one-half of one per cent would do the work where four per cent is often used. Its absorption into the general circulation should be avoided if possible, and in operations on the fingers, toes, the penis, etc., a ligature will prevent this, most of the solution draining out when the incison is made. A stronger solution than four per cent when repeatedly used in the eye is likely to wrinkle the cornea, especially in the negro race. The drug should be used with caution, especially about the head, as

not a few alarming cases of syncope, delirum and paralysis, or tetanic fixation of the respiratory muscles, have been observed.

Eucaine has the advantage over cocaine in that it is more readily absorbed, covers a larger area, is not nearly so toxic, lasts longer, keeps better, and does not dilate the pupil so much as cocaine.

Gant and Schleich use the **water** infiltration method, employing sterile water by hypodermic. It produces an artificial ischemia and anesthesia due to pressure and tension in the tissues.

In trigeminal and supra-orbital neuralgia, primary medication with morphine gr. 1-4, and hyoscine gr. 1-150 prepares the patient for the insertion of the needle and stylet into the neighborhood of the nerve trunk. A solution of 3½ per cent eucaine is used to deaden the area after removing the stylet. In about half a minute a few drops to 20 drops of 90 per cent **alcohol** are injected, producing a complete and continued anesthesia.

Magnesium sulphate in a 25 per cent solution has met with favor in nerve blocking, its action being probably due to the increased amount of magnesium that is normally present, temporarily inhibiting or abolishng the power in the nerve of conducting motor and sensory influences.

Guaiacol, menthol and **phenol** are anesthetics of no mean value, and are extensively used either alone or usually in combination.

Urea and quinin hydrochlorid is a splendid local anesthetic, being often used locally in the field of operation where a general anesthetic is also used.

The two factors over which we have the greatest control in shock during operation are the trauma of the operative procedure and the toxicity of the general anesthetic. Theoretically, local anesthesia during operation will block most or all sensory impressions. In this way the brain can be temporarily disconnected from the wound. Nitrous oxide-oxygen obliterates psychic shock and produces no toxic shock. The local anesthetic obliterates the traumatic shock.

During operations on the rectum and anus the anesthetic should always be removed temporarily while the sphincter ani is being divulsed. Where for any reason the anesthetic has to be withdrawn it should not be replaced with full strength, but gradually.

Death during an anesthesia, where the anesthetic is a contributing factor, is, in order named, from shock, pneumonia, nephritis, endocarditis and myocarditis or suffocation from inspired mucus. When death is due to the anesthetic alone: overdose of the anesthetic, improper administration, a susceptibility of the patient to the anesthetic employed. Often death is due to carelessness in not watching the pulse and respiration and having the attention on the operation and not on the patient. Rarely death may be due to overstimulation with whiskey in an effort to resuscitate.

Owing to the fact that only a small number of deaths from anesthesia are reported, the impossibility of determining accurately the total number of administrations, and there being no standard to determine what constitutes a death, we are aware of the cause of error in estimating the dangers of any anesthetic. This deplorable fact impresses us with the importance of keeping accurate records of surgical cases, the kind and amount of anesthetic used, time started and time ended, pulse and respiration before, during and after, stimulants used, complications and other data that would prove valuable in the future.

N. E. Troy and Foster Sts.

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A. H. Miller, Journal American Medical Association.

EPITHELIOMA OF CHEEK—EXCISION WITH GLANDS OF NECK-PLASTIC FOR CURE OF DEFECTS—RECOVERY.

By George T. Tyler, A.M., M.D.,
Greenville, S. C.

Patient C. M. R., male, age 52. Family history unimportant. Personal history unimportant, except for pneumonia and empyema on right side two years ago. He expectorates copiously each morning.

F. I.—For several years the patient has noted a small nodule on the mucous surface of the left cheek near molar teeth. He paid no attention to it, until four months ago, when it began to increase in size and ulcerated. Treated with caustics and X-ray, it became larger and grew painful. In spite of advice, he waited until the present time, when he sought relief only be-

cause of pain and inconvenience in eating. He has not lost weight.

P. E.—Patient of small stature; mucous membranes of good color. He has psoriasis on face, hands, arms and legs. Seborrhoeal keratitis on mucous surface of the upper lip, just to the right of the middle line. Heart sounds normal. Lungs clear, except for impaired percussion note on right side extending in a curved line from the scapular line up in mid axilliary region, and curving down to mammary line. Hippocratic fingers. Pyorrhoea alveolaris. Left cheek is red, much swollen and indurated. Ulceration on inside extending from the angle of the mouth back to the last molar teeth. Palpable glands in the upper part of the neck, extending behind the sterno-mastoid muscle, as well as forward in the region of the submaxilliary gland.

Specimen—Epithelioma of Left Cheek.
(Centimeter Scale.)
Inside. Outside.

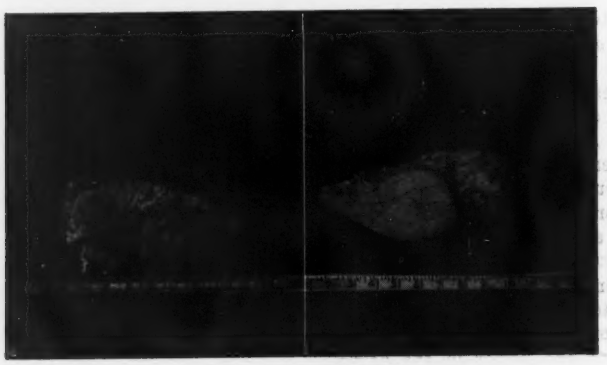

Fig. 1.

Side View. Scars on Cheek, Face and Neck.

Fig. 2.

As operation was the only chance the patient had, he accepted it, though he was told that it would be mutilating.

Operation March 10th, 1913. Under ether anesthesia incision was made along the anterior border of the left stero-mastoid muscle. Ligation and division of the external carotid artery; dissection of glands and fascia en masse of the anterior triangle of the neck, including the sub-maxilliary salivary gland; dissection of glands behind the sterno-mastoid muscle in the posterior triangle of the neck.

Excision of Cheek—Skin beyond the indurated area was incised and dissected in order to save as much skin as possible. The whole cheek was then removed from the angle of the mouth to the angle of the jaw, including part of the masseter muscle. The mucosa was not spared; every effort being made to give the growth as wide a circuit as possible. The skin incision extended almost to the ear. After the removal of the growth the edges of the wound were seared with the actual cautery. The mucous membrane of the wound included the entire buccal mucosa from the reflection of the alveolar border of the lower to that of the upper jaw.

The problem of closing this defect in the cheek was now to be met. As the condition of the patient did not warrant an extensive plastic operation, I drew the skin edges together, relieving tension by deep parallel incisions above and below. Fortunately, I could bring the lip edges together with fair accuracy. This end of suture line included skin and mucosa for 2 c. m. of its length. For the remainder of the wound, I hoped that the mucous membrane would grow in from the edges, making a lining for the cheek, though there seemed small chance that the skin sutures could hold. Wound in neck closed with drainage.

The patient reacted well from the operation. Drainage from the neck incision was removed on the following day. The whole cheek-wound seemed healthy, but with the exception of 1 c. m. at each extremity the skin edges separated, leaving an opening in the cheek 5x2.5 c. m. The patient was seen at frequent intervals. The wound was kept clean; the mucosa gradually extended, making a new lining for the cheek. Gradually the skin edges closed in to about one-half the original size of the wound. The patient occludes this with a cotton pledget when eating. He can separate his teeth 1.5 c. m.

May 9th, 1913. Small palpable gland felt in the left sub-maxillary region. Wound in cheek is becomming smaller.

May 30th, 1913. The patient, after much persuasion, consented to removal of the gland noted on May 9th. Under local anesthesia it was removed. Microscopic examination showed invasion. Several nests of epithelial cells were found. The wound in the cheek is smaller.

June 7th, 1913. The patient has discovered in the right submental region a palpable gland.

June 23d, 1913. The patient has three teeth near the edge of the wound, one lower and 2 upper, all molars, which it is difficult to clean. Pyorrhoea increasing. Under local anesthesia the gland noted June 7th was removed and the wound was closed with interrupted satures. Under N. O. anesthesia the teeth were removed; the lower through the defect in the cheek. (I regret that these teeth were not extracted at the first operation.)

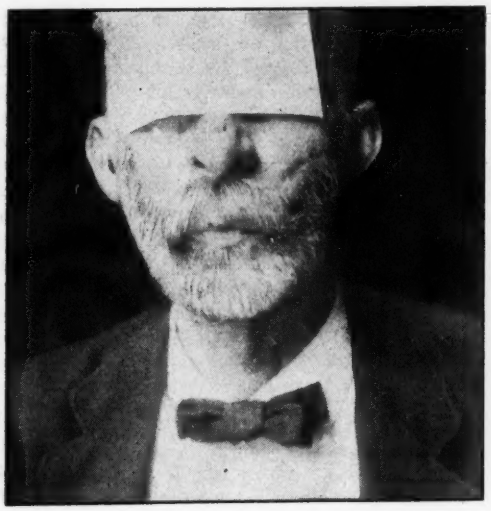

Fig. 3.
Pursing Lips. Note Scar on Cheek.

Fig. 4.
Note Ability to Open Mouth. Note Scar on Cheek.

Subsequent History—Patient was seen the latter part of August. His condition was excellent. There is a small palpable gland, freely movable beneath the left romus of the jaw; removal advised.

September 28, 1913—Wound in cheek still entirely healed. Patient feels for hairs in his mouth from the edges of the reflected skin. The gland noted has increased in size, and is firmer. He will not have it removed.

November 2, 1913—Patient looks bad. There is much induration beneath left romus of jaw. It is adherent to the deeper structures; but only

slightly elevated. Hairs removed from inside of mouth at scar.

The opening in the cheek at this date was 1x.5 c. m. Except for this defect, the mucosa had covered the entire inner surface of the cheek. The skin and mucous surfaces were separated. The mucous surfaces were reflected and brought together, edge to edge, care being taken to pla e the cat-gut sutures in the sub-mucosa. By burrowing under the skin I could approximate the edges using silk sutures, thus making two layers of sutures.

The microscopic examination of the gland removed showed malignancy with areas of degeneration.

July 9th, 1913. The wound in the cheek broke down three days after operation. It assumed a cup-shaped appearance, but the granulations were healthy. These were scraped and trimmed. By exerting pressure with a cotton pledget moistened with two per cent phenol, the mucous edges were prevented from growing to those of the skin. This simple device ultimately brought about the closure of the wound from the mucous surface. The defect at present is smaller than before the attempt to close it. There is an area of induration at the site of the removal of the submental gland. It is not adherent to the deeper structures. Its removal is advised. General condition of the patient is good.

August 9th, 1913. The wound in the cheek is entirely closed. Seen from the inside of the mouth, the mucosa looks normal. The area of induration at the site of removal of the sub-mental gland has entirely disappeared. No palpable glands anywhere in the neck. The patient is to report one month from today.

The patient has aided much in the progress of the case by keeping the wound clean.

This case is interesting because of the closure of the defect in the cheek without extensive plastic operation. In looking through the text books and other works on plastic operations about the face, one finds numerous suggestions for restoring the mucous surface of the cheek. These have chiefly to do with inversion of skin from face, forehead, neck, or arms, the skin gradually becoming transformed to mucous membrane. Portions of the tongue have been reflected to cover these defects, but so far as I have seen, no case has been reported where so large a defect has healed by the growth of mucosa from the edges of the wound. I report the case for this reason, for I know too well the likelihood of metastasis of the maligant process.

THE CYSTOSCOPE IN SURGICAL DIAGNOSIS.*

By James Knox Simpson, M.D.,
Jacksonville, Fla.

It is not with the hope of presenting anything new in cystoscopic work that the author has chosen this subject, but with the hope of stimulating a desire for more complete and accurate diagnoses of lesions involving the urinary tract, by the recalling to your minds of a method which is so unfailingly accurate in its data that its value as a diagnostic asset cannot be over estimated.

In the whole field of surgical diagnosis there is probably no branch in which there has been made more substantial progress during the last two decades than in the diagnosis of lesions of the urinary tract. Efforts have been made to examine visually the interior of the bladder since the early part of the nineteenth century, but without success until Nitze's pioneer work about 1877, which resulted in his introduction of the first electrically lighted cystoscope in 1879. Since this epoch making event the literature on this subject has become voluminous, the mechanical and technical difficulties have been eliminated, and in the modern cystoscopy which has resulted, surgery has added to its diagnostic armamentarium a method which has had a large share in reducing the mortality of operative procedures on the kidneys from almost prohibitive figures to less than 3 per cent.

Pre-eminently associated with this progress are the names of Alberran, Casper and Brenner, and in this country Tilden Brown, Elsner, Bransford Lewis, Braasch and Kelly. Each of the three prevailing methods of examination has its advocates; Kelly favors the direct vision—air distention and reflected light method. Bransford Lewis, Pilcher and others the lens system, and Braasch the direct vision water distention method. Personally, I prefer the latter. However, there are many points in favor of each.

There are two classes of cases coming under the observation of the surgeon in which the cystoscope is of invaluable aid in determining the seat of the trouble.

Class I—Those cases in which the majority of the symptoms both subjective and objective are abdominal.

Class II—Those cases which by their symptoms

*Read before the Florida State Medical Society, Miami, Fla., May 13, 1913.

present at a glance evidence of their involving essentially the urinary tract.

Class I.

The derivation of the word abdomen from **abdere** (to conceal), indicates the difficulties which have ever attended our efforts to arrive at a proper clinical diagnosis of intra-abdominal lesions.

Through years of accurate observation of clinical symptoms, and of surgical pathology, on the operating table by our masters of surgery, many of these difficulties have been eliminated; however, there is quite a sufficient number remaining to render any useful method for their elimination worthy of our adoption.

The following cases are selected as illustrative of this class:

Case 1—Miss A. W., age 20, single. For two years had suffered with intermittent attacks of pain in the right iliac fossa, coming a month to two months apart, usually following an extra exhaustion either from work or pleasure. The pain was severe enough on two occasions to require morphine for relief, was always accompanied by nausea and occasional vomiting, and followed by tenderness over the whole right side of the abdomen. The onset of the pain was usually sudden. She thinks she never had any fever with the attacks. Attacks usually lasted from one to three days. Between attacks she was a chronic sufferer from digestive disturbances, heartburn, sour stomach and occasional constipation. Menstruation had always been regular, normal in amount and without pain. There were no urinary symptoms and she had never noticed blood or pus in the urine. She had lost six pounds in weight.

Physical examination showed nothing abnormal except tenderness to pressure over the area of the appendix and extending up into the loin along the course of the ureter. Urine between attacks showed few pus cells, otherwise negative.

The ureteral catheter in the ureter met obstruction near the pelvis of the kidney. X-ray confirmed diagnosis of a stone, which was removed through a loin incision with perfect relief from symptoms.

This case, as you see, presented symptoms which were essentially those of appendicitis, which indeed had been the diagnosis made on two occasions previously by two different physicians. Certainly had an operation been performed on this case on the diagnosis which the history and abdominal examination indicated, it would have been done through a gridiron or a right rectus incision, the appendix would have been given French justice, and the patient would have still retained the ureteral stone along with the symptoms from which she was seeking relief, having acquired in addition a well justified grudge against surgery in general and the operating surgeon in particular.

During my service in the Mayo clinic while working with Braasch I had the opportunity of seeing several such cases of ureteral stone who had been appendectomized elsewhere without relief.

Case 2, under this head, is a similar case in a boy in whom a diagnosis wthout a cystoscopic examination was extremely problematical.

Mr. R. K., aged 24, chauffeur, had suffered for two years with attacks of severe cramp-like pain in the right lower quadrant of the abdomen, radiating up into the loin and region of the right kidney, usually lasting from one to two days. Was confined to bed with only one attack, which was the last one when he was in bed for one week. Attacks were accompanied by nausea but no vomiting, and followed by soreness and tenderness over the whole right abdomen, and back into the region of the right kidney. He never had chills, fever or jaundice. He had never passed any blood in the urine, but had noticed that he had some frequency of urination with each attack. Bowels were always constipated, and he suffered with flatulence, sour stomach, and heartburn very frequently between the attacks.

General physical examination showed nothing abnormal outside of the abdomen. He was very tender to deep pressure over the right abdomen, especially from the right iliac crest up to the right kidney along the course of the ureter. Rectal examination showed nothing of interest.

Urine examination: Acid—specific gravity 10.20—albumen, faint trace sugar, negative. Microscopic: No casts nor red blood corpuscles—large number of leucocytes and pus cells.

Cystoscopic examination: Bladder normal, meati normal, urine from both ureters appeared clear; but microscopic examination of that from the right side showed pus cells and leucocytes. Urine from the left side was normal. There was no obstruction on the right side to the catheter, which passed freely into the pelvis of the kidney. No hydro-nephrosis.

Operation was advised with a tentative diagnosis of retro-cecal appendix.

On opening the abdomen through a right rectus incision we found that he had a short cecum with rttro- cecal appendix adherent along the course

of the ureter for about an inch, with the tip adherent to the pelvis of the kidney. The appendix was removed and abdomen closed. Recovery was uneventful.

Case 3, though of a different class of cases somewhat, is rather interesting from a diagnostic standpoint.

Mr. D. M., male, age 28 years, electrician; was sent into St. Luke's Hospital on December 24, 1911, in a state of rather profound shock with the history of a half hour previously having fallen through the hatch of a boat, striking broadside over a beam, the center of force being expended over the left hypochrondriac region.

Physical examination showed a man of slender build, good muscular development, suffering great pain. Skin clammy, beads of perspiration on forehead, pulse 150, weak and thready. Respiration short and jerky, inspiration being accompanied by severe sharp pains in the left hypochondrium. No signs of injury to the spine or ribs. Chest findings negative. Abdomen slightly distended, muscles rigid over the whole left side, extremely tender to palpation over the whole left abdomen and loin, especially so in the left hypochondrium and costo-vertebral angle. Dull to percussion over the left flank.

The man was evidently suffering from an internal haemorrhage. The question naturally arose, was the haemorrhage due to a torn mesentery, a ruptured abdominal viscus, ruptured spleen, or ruptured kidney? I made a cystoscopic examination at the request of Dr. P. C. Perry, on whose service the case was entered. When the cystoscope was introduced clear urine escaped from the bladder; however, upon examination of the meati the left was seen to have a clot of blood protruding from it for about one-eighth of an inch, which, after dislodgement of the clot by the ureteral catheter, began discharging almost pure blood.

A diagnosis of ruptured kidney was made and through a free loin incision a few moments later I assisted Dr. Perry in removing about a litre of clotted blood from the kidney pouch along with the pulpified remnants of a ruptured kidney. The patient made an uninterrupted recovery and was discharged from the hospital on January 11, 1912.

This was a case of emergency, and some of you may doubt the wisdom of taking the time to do a cystoscopic examination. When, however, you weigh the ten minutes' time consumed in making the examination against the conservation of time in making in the beginning a free posterior incision, rather than making an abdominal incision, and either having to work under the difficulties of poor exposure or change the position of the patient and make a second incision posteriorly, I think the objection may be overruled.

Another class of cases coming under this head are abdominal tumors of uncertain origin. Every abdominal diagnostician has probably seen abdominal tumors, the origin of which he could not determine, and has been at a loss to say whether a given mass was a floating kidney, either normal, hydro-nephrotic, or the seat of a tumor; or whether the mass had its origin elsewhere in the abdomen. In practically all these cases it can be definitely determined whether or not the kidney is the seat of the trouble by the use of the cystoscope in conjunction with the X-Ray; which, by the way, should always be supplementary one to the other. The surest method of accomplishing this is by the use of pyelography (the taking of an X-ray picture of the pelvis of the kidney after it has been injected with collargal or some other silver salt impenetrable to the X-rays). This method was introduced by Voelcker, of Heidelberg, but to Braasch, of Rochester, Minn., is due the credit of popularizing the method in this country and his pioneer work along this line has placed on a firm footing a method of determining the shape, size and location of the renal pelvis, the real value of which in the diagnosis of hypernephromata, hydro-nephrosis, tuberculosis of the kidney, etc., cannot be questioned.

Class II.

The second part of this paper, dealing with that class of cases the symptoms of which are essentially urinary, resolves itself mainly into the case of THE ROUTINE PRESCRIBING OF UROTROPIN AND BORIC ACID IRRIGATIONS vs. AN ACCURATE DIAGNOSIS.

When from the history it is evident that the urinary tract is the seat of all or the greater part of the patient's symptoms, it is manifestly evident that the physician must before he can rationally treat the case, answer the following questions:

A. Is the urinary tract the seat of a pathological lesion, or are the symptoms due to extraneous pathology, such as tabes, pressure on the bladder from fibroids, cystocele, etc.?

B. If pathology exists, in what part of the urinary apparatus is it located?

C. What is the nature of the pathological lesion?

D. To what extent is the urinary tract involved by the existing pathology?

The question A can practically always be an-

swered by a thorough physical examination, including urinary analysis. However, in the few cases where there is doubt a cystoscopic examination gives positive evidence.

B is a very important question, upon the correct answer of which will largely depend the correct treatment of the case. A consideration of the more important urinary symptoms will suffice to illustrate. Urinary frequency and urgency, one of the most common symptoms of disease of the urinary tract, is most frequently caused by stricture of the urethra or posterior urethritis, hypertrophied prostate, stone, carcinoma or papilloma of the bladder, or tuberculosis of the kidney. Pyuria is a symptom of each of the above-named pathological processes. Haematuria is also very frequently associated with each of them. Here is pathology in each section of the urinary tract, all presenting grossly the same symptoms. The difference in treatment is apparent.

Granting the fact that the history points clearly to one kidney as the seat of the trouble, would we be willing to operate on that kidney without first determining the presence of and normality of its twin organ, in the face of the undoubted knowledge that in the presence of a kidney completely destroyed by disease its fellow is frequently the one to which the symptoms are referable, due its conpensatory hypertrophy?

Or, if the history points clearly to the bladder as the offending organ, are we going to be willing to call it cystitis and prescribe urotropin and boric acid irrigations, when we realize that cystitis in a large majority of cases is merely a symptom of some more definite causative pathology?

In tuberculosis of the kidneys in a very large majority of the cases, due to secondary involvement of the bladder, symptoms referable to that organ are the first to appear, and are frequently the only symptoms.

Regarding question C, it is manifestly impossible to go into the cystoscopic findings in all the various types of pathological lesions of the urinary apparatus in a paper of this scope. A few examples will suffice. For proper treatment of the case such evidence as the following is indispensable.

The number, size and location of bladder stones, the presence or absence of intra-vesical enlargement of the prostate, the malignancy or benignancy, and if malignant, the operability or inoperability of bladder tumors, etc.

In determining whether or not a given case is amenable to treatment, and if so, the kind of treatment indicated, the answer to question D is of signal value. Double ureteral catheterization, and examination of the segregated urines in conjunction with one of the functional kidney tests, will in a large proportion of the cases satisfy the surgeon as to whether or not, in view of a possible nephrectomy, the other kidney is capable of sustaining life. Again, the operability or inoperability of a case of carcinoma of the bladder depends entirely on the extent of the involvement of the viscus, evidence of which is attainable only rarely except by means of the cystoscope.

In conclusion, I wish to report two typical cases which will serve to illustrate the necessity for an early accurate diagnosis.

Case 1—Miss L. M., a young lady 25 years of age. Was referred to me on account of persistent frequency of urination, especially nocturnal, of two months' duration, which had not yielded to urinary antiseptics and bladder irrigations. The family history and past medical history had no bearing on the present trouble. General physical examination showed nothing abnormal except that she appeared rather under-nourished. Pelvic organs were normal. Urine showed a considerable number of pus cells and a few red blood corpuscles, otherwise negative.

Cystoscopic examination showed bladder congested around the trigone, no ulcerations, remainder of the bladder clear. Collected specimens of urine from both kidneys showed clear urine from the left side and pus cells and red blood corpuscles from the right. No obstruction to the passage of the ureteral catheter, no hydronephrosis. The indigo-carmine test showed only very slightly impaired function of the right kidney, the left being normal. Tubercle bacilli were found in the specimen from the right kidney.

Due to the early stage of the process and the patient's ability to carry out the proper medical treatment, I advised against operation. She was treated by open air, forced feeding and tuberculin for six months, and at the end of that time she was entirely free from symptoms and cystoscopic findings were negative.

Case 2 is a tragedy.

Mr. N., 24 years old, of New York. Came to Florida during the fall of 1911 in a very poor state of health. Dr. Frederick Bowen saw him and referred him to me for a cystoscopic examination, with the following history: Two years before he had begun suffering from bladder irritability and tenesmus, with persistent nocturnal frequency, noticing occasionally a little bloody

tinge to the urine. He consulted a physician, who told him that he had cystitis, and prescribed urotropin for him. This he took for a couple of months with no benefit, the doctor then beginning irrigations of the bladder with boric acid solution, from which he experienced temporary relief. The symptoms soon recurred and became exaggerated. He then began having pain in the region of the right kidney, and in a couple of months the pain became bilateral, urinary frequency and urgency became so exaggerated that he was unable to work and had practically no rest at night. He was losing weight constantly, and was in a wretched condition when his doctor advised him to go to Florida. Up to the time he came here he had never had a cystoscopic examination made. On January 3, 1912, I made a cystoscopic examination, with the following findings: Bladder contracted down to a capacity of not more than two ounces; the whole of the mucosa covered over with dirty, grayish ulcerations, and urine so cloudy that it looked like pure pus coming down from each kidney. The diagnosis was bilateral tuberculosis of the kidneys and bladder.

The examination at this late day was only of prognostic value. He had been irrigated faithfully for two years with about as much chance of the treatment reaching the real seat of trouble as a bismuth enema would have of reaching and healing a duodenal ulcer. A hopeless prognosis was given, and he returned to New York, where he died one month later.

331 St. James Bldg.

REPORT OF A DEPRESSED FRACTURE OF THE SKULL INVOLVING THE SUPERIOR LONGITUDINAL SINUS.

By C. C. Hightower, B. S., M.D.,
Hattiesburg, Miss.

The patient, a man, age thirty-six, had been struck on the head with an iron bolt one hour before he was seen for the first time.

His symptoms were typically those of compression of the brain, and examination revealed a depression in the scalp.

Operation demonstrated fracture and depression of the upper portions of the two parietal bones. The fragments of bone were elevated, and the pieces which were found to be entirely loose were removed. The elevation and removal of a large piece in the midline resulted in the rupture of the roof of the superior longitudinal sinus, with profuse venous hemorrhage. The sinus could not be caught up and ligated, as it was torn evenly up to the edge of bone. A small strip of gauze was lightly packed into and around the end of the bleeding sinus, it being supported by the falx cerebri below, the bone above, and the cerebral hemispheres on either side. The hemorrhage was readily controlled because of the low pressure in the large sinuses. The scalp was closed with interrupted silkworm-gut sutures, with the exception of a small opening, through which the gauze projected, directly over the point of hemorrhage.

The symptoms of compression disappeared and the patient's condition was altogether satisfactory.

At the end of forty-eight hours an attempt was made to remove the packing, and just as the last portion was being withdrawn hemorrhage as severe as before returned. The pack was again inserted and the bleeding again controlled.

At the end of another forty-eight hours a second attempt was made to remove the packing, which was successful, leaving the wound dry and clean.

The patient made an uneventful recovery.

BOOK REVIEWS

The Principles and Practice of Gynecology. For Students and Practitioners.

By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth edition, thoroughly revised. Octavo, 795 pages, with 439 illustrations, of which many are in colors, and 24 full-page plates. Cloth, $5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Former editions have held an exalted position in the gynecological realm, for in universal popularity among both practitioner and student this text has never been excelled. The arrangement of the subject matter in pathological and etiological sequence, the carefully described processes and the excellent illustrations of most gynecological conditions give to the work utility and convenience rarely found in single volumes. The subjects are arranged as follows: Part I. General Principles of Gynecology and Gynecological Procedure. Part II. Infections, Inflammations and Allied Disorders. Part III. Tumors Tubal Pregnancy. Malformations. Part IV. Traumatisms. Part V. Displacements of Uterus and Other Organs. Part VI. Disorders of Menstruation.

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The SOUTHERN MEDICAL JOURNAL is controlled by its subscribers, whose tastes and wishes are always complied with as far as possible. When established in 1908 it published 64 pages monthly at $2.00 per annum. In 1910, when it was consolidated with the Gulf States Journal of Medicine and Surgery and the Journal of the Southern Medical Association, we published 100 pages at the same price; but we had much more valuable matter than we could publish, so that in 1913 smaller type was used in order to afford more reading matter in the same space. So many readers have expressed regret at the change and have signified their preference for a larger type, that it has been decided to publish the JOURNAL henceforth in larger type. It, therefore, becomes necessary to further enlarge the JOURNAL, and beginning with the January number the JOURNAL will present its readers with about one-fourth more pages of medical literature than ever before.

The cost of this enlargement will be such that it will be necessary to raise the subscription price to $3.00 a year. This we are sure will be satisfactory to our readers when they remember that we already publish more original matter than many $5.00 journals. There will be no raise in dues for the Southern Medical Association, though the JOURNAL will not receive any more for sending it to the members of that organization. They, therefore, will receive a $3.00 journal and enjoy the privileges of membership in a great medical organization without extra cost.

The JOURNAL regrets the necessity for increasing the price of subscription, but rejoices that Southern physicians are contributing more of the kind of medical literature that has made the SOUTHERN MEDICAL JOURNAL recognized as the equal in scientific and literary value of any medical journal published in the world.

OUR INDEX.

The JOURNAL congratulates itself and its readers upon the Index it presents to them with this number. It has required a labor of no slight proportions to so analyze and arrange the hundreds of titles of papers printed in the JOURNAL during the past twelve months, but the result is worth the effort.

It places before the eyes of our subscribers a condensed view of the extent and value of the contributions we have secured, in such a manner that a true estimate is readily reached. It shows many and repeated studies of the most important problems in every department of medicine and surgery, hygiene, and sanitation now confronting the medical profession in the South by those who are most competent to consider, solve and teach them, many of whom have achieved international fame.

The information to which the Index points is in many instances not elsewhere available. Throughout the year the utmost care has been exercised to present to our readers nothing but authentic matter.

The twelve numbers of the JOURNAL, bound into one volume, makes a year-book of medical progress that cannot be duplicated. Dr. Nicholas Senn said that "medical journals should be the doctor's text-book," and this should certainly be true to the readers of the SOUTHERN MEDICAL JOURNAL. Southern doctors should not only read it carefully each month, but at the end of the year the twelve numbers should be bound for reference. We hope that the JOURNAL's Index will add to its value as a medical publication.

THE LEXINGTON MEETING.

Members of the Southern Medical Association who attended the recent meeting at Lexington regard it as the greatest assemblage of doctors ever gathered in the South and satisfactory in every respect. The highest type of physicians in every Southern State was fully represented. The scientific papers were truly remarkable, and the discussions brought out views of practical character based upon theory and experience that made every man present feel better prepared to practice his profession from having heard them.

The various entertainments prepared by the Lexington physicians were ideal and will long be remembered by those fortunate enough to be present. The reception and ball at the Phoenix Hotel on Tuesday evening was a brilliant social event, which proved that Kentucky's reputation for beautiful women is justified; while the cordial hospitality of the Lexington physicians was of the type that can be produced only by "six generations of culture and refinement." The progressive character of the Southern physicians present was demonstrated by the fact that they showed themselves as familiar with the "tango" and "turkey trot" as with tannin and triturates.

One of the most unique, as well as one of the most instructive and enjoyable features of the meeting, was the visit to Elmendorf, the largest and best equipped dairy in the world. Luncheon was served in the stalls where every day for a number of years six hundred cows have been milked, and not the slightest odor or other evidence of the fact that just a few hours before the visit of the physicians the place was occupied by six hundred cows. If every city could boast of such a dairy our infant and typhoid mortality would be greatly reduced.

Those who attended the Jacksonville meeting will recall that Dr. W. W. Crawford, of Hattiesburg, Miss., cast the deciding vote which carried the Association to Lexington. In recognition of Dr. Crawford's partiality to Lexington, the manager of the Elmendorf dairy presented him with a fine heifer calf with a pedigree as long as the ten commandments, which proved her to be of royal bovine blood. The presentation address was delivered by Lexington's great "Convention Specialist," Mr. John G. Cramer. Dr. Crawford, in his speech of acceptance, made a hit by calling attention to the fact that all the great statesmen, that all the great men in medicine,

"could never have lived had it not been for milk."

Baltimore, Richmond, Nashville, New Orleans, and nearly all the other Southern cities were represented by their foremost men, and the representation from the small towns and from the country proved that there are just as progressive men practicing medicine in the rural districts as in the cities. Memphis had probably the largest delegation, having come in a body on the "President's Special," which, in honor of Dr. Frank Jones, President of the Southern Medical Association, brought the delegation from Memphis and West Tennessee. Jacksonville, Florida, also sent many of her leading physicians, who were warmly greeted by the surviving veterans of the "Battle of Jacksonville."

The Lexington Committee on Arrangements, consisting of Drs. Clarke, Garr and Vance, were untiring in their work in preparation for the meeting, and they, with the Committee on Entertainment, which apparently consisted of every member of the Fayette County Medical Society, were on hand every minute to look after the comfort of the visiting physicians. The Phoenix Hotel provided every comfort and luxury for its guests that heart could wish or hospitality devise. Mention should also be made of the very liberal and splendid reports of the meeting by Lexington's two up-to-date dailies, the Leader and the Herald. The importance of the occasion was also evidenced by the fact that the Associated Press devoted more attention to this meeting than any other convention held in the South in 1913.

The Southern Medical Association demonstrated at this meeting that it has come to stay. It is composed of the highest ability and brightest talent of the medical profession of the South, and is not afraid to compare its work with that of any other medical organization in existence. While many of its members were deprived of the privilege of attending the meeting, they will have the opportunity of reading in the SOUTHERN MEDICAL JOURNAL the papers and discussions which record the latest advances in every department of medicine, including public and private hygiene and sanitation.

Invitations were received from Galveston, Asheville, Atlanta, Jacksonville, and Richmond for the 1914 meeting. Richmond was selected, and the plans as outlined by the physicians from that city present at Lexington proved that "Old Virginia" will endeavor to uphold her reputation for the highest type of Southern hospitality.

Because of the fact that most of the JOURNAL force attended the Lexington meeting the December number is delayed a few days. The January number will contain the minutes and full reports of the meeting. We are pleased, however, to publish a few important addresses in the December number.

The following is a list of officers elected:

President, Dr. Stuart McGuire, Richmond, Virginia.

First Vice-President, Dr. J. W. Jervey, Greenville, S. C.

Second Vice-President, Dr. F. H. Clarke, Lexington, Ky.

Secretary-Treasurer, Dr. Seale Harris, Mobile, Ala.

SECTION ON MEDICINE.

Chairman, Dr. Robert Wilson, Jr., Charleston, S. C.

Vice-Chairman, Dr. Wm. Leroy Dunn, Asheville, N. C.

Secretary, Dr. Randolph Lyons, New Orleans, La.

SECTION ON SURGERY.

Chairman, Dr. P. C. Perry, Jacksonville, Fla.

Vice-Chairman, Dr. Isidore Cohn, New Orleans, La.

Secretary, Dr. John H. Blackburn, Bowling Green, Ky.

SECTION ON OPHTHALMOLOGY, RHINOLOGY, OTOLOGY AND LARYNGOLOGY.

Chairman, Dr. Homer Dupuy, New Orleans, La.

Vice-Chairman, Dr. W. S. Manning, Jacksonville, Fla.

Secretary, Dr. R. B. Nelson, Memphis, Tenn.

SECTION ON HYGIENE AND PREVENTIVE MEDICINE.

Chairman, Dr. R. M. Cunningham, Birmingham, Ala.

Vice-Chairman, Dr. A. T. McCormack, Bowling Green, Ky.

Secretary, Dr. W. S. Leathers, University, Miss.

DR. WADE BROWN'S RESEARCH WORK ON MALARIA.

Some of the most valuable recent facts concerning malarial fever and the malarial parasites have been contributed by Dr. Wade H. Brown, of the University of North Carolina. His investigations have been devoted primarily to the study of malarial pigment, endeavoring to determine its significance as related to the paroxysm, and the production of pathologic changes in the various organs. The results of four important studies have been published in the Journal of Experimental Medicine within the past three years, namely: (1) "The Nature of Malarial Pigment," March, 1911; (2) "Malarial Pigment (Hematin) as a Factor in the Production of the Blood Picture of Malaria," July, 1913; (4) "The Effect of Hematin on the Circulation and Respiration," July, 1913, and a fifth, appearing in a recent issue of Archives of Internal Medicine, on "Renal Complications of Hematin Intoxication and Their Relation to Malaria."

These articles, quoting from the author's own summary, have shown: 1. "That malarial pigment (the so-called melanin) is not a melanin at all, but is hematin, derived from the hemoglobin of the red blood corpuscle by a digestive activity of the malarial parasite." 2. "That hematin is a highly toxic substance when introduced into the animal circulation in doses commensurate with amounts liberated into the human circulation during an average malarial paroxysm." 3. "Clinically, hematin poisoning is characterized by (a) a paroxysm identical with the malarial paroxysm; (b) the production of a secondary anemia; (c) an increase in the large mono-nuclear leucocytes and pigmented phagocytes; (d) a reduction in the blood platelets; (e) a tendency to hemorrhage in marked intoxications; (f) renal complications varying from albuminuria to an acute nephritis(?) with hematuria and in rare instance a hemoglobinuria." 4. "The mode of production of the paroxysm finds its explanation in the physiological action of hematin, which acting on the vaso-motor center, causes a marked dilatation of the splanchnic vessels, and an active constriction of the vessels of the skin." 5. "There is some evidence to show that an immunity may be acquired to the action of hematin."

It is noticed wtih great regret that Dr. Brown will leave North Carolina this fall, but he is to be congratulated upon the recent appointment to the Rockefeller Institute, where he will soon go to continue investigations already begun, and to devote his efforts to medical and scientific research.

SALT SOLUTION VERSUS PLAIN WATER IN PROCTOCLYSIS.

Whether salt solution or plain water should be used in proctoclysis, is a very important question. Very little work has been done heretofore to determine the relative values of these two agents, for as a rule, the profession accepted the old teaching, without question, that salt solution should be used in every proctoclysis. The reason advanced by some was that the salt solution was less irritating to the intestinal mucosa. Some have thought that it was absorbed more rapidly than the plain water.

In this issue of the JOURNAL appears an article on "Proctoclysis, an Experimental Study," by Dr. H. H. Trout, of Roanoke, Va., in which the author presents the results of his observation and experimental study to determine the relative values of salt solution and

plain water proctoclyses following surgical procedures. In a total of 2,500 cases, half the patients were given saline solutions, and the other half were given plain water by rectum following operations. The cases were alternated, and the test was equally rigid in both instances. The average amount of water absorbed for twenty-four hours was 3000 c.c., and of salt solution 2500 c.c., or a difference of 500 c.c. The amount of urine voided in twenty-four hours was 825 c.c. in the water cases, and 575 c.c. in the salt cases, or a difference of 150 c.c. This means that water cases absorbed 500 c.c. more from the proctolysis, and voided 150 c.c. more of urine, than those cases administered the salt solution. We realize the great importance of proper renal function in post-operative cases, and likewise other conditions of patients.

It is brought out that the hospitals in our land have no definite way of preparing the salt solution, so that the strength as well as the composition of the saline solutions employed vary considerably. This is interpreted by the author as meaning that hospitals have paid very little attention to the relative value of plain and saline solutions.

It is a very significant fact the author brings out, that in many post-ether nephritic cases the albumenuria constantly present along with the salt solution proctolysis, entirely cleared up under the change from saline to plain water. At various times physicians have noticed edema of the feet during the usage of saline solutions by rectum. These facts should contradict the old custom of using salt solution enemata in infants and children.

While the work of the author is not exhaustive, it is fairly conclusive that plain water should be used as a routine instead of salt solution, for it is more rapidly absorbed, produces greated diuresis, and is less irritating to the kidneys and the rectum.

HAS A CURE FOR HYDROPHOBIA BEEN FOUND?

In the A. M. A. Journal of October 25 appears an article worthy of more than ordinary attention. It is entitled "A Clinical Report of Seven Cases of Hydrophobia, Together with a Case Clinically Similar with Recovery Following the Injection of Quinine. By D. L. Harris, M.D., St. Louis." The seven fatal cases are clinically described with all their gruesome details, ending in death. Rabbits injected with emulsions of their medullas invariably died, and many Negri bodies were found in the brains of each. The eighth case was apparently clinically identical with the others in every respect save two; one, that being an itinerant umbrella mender, he had been bitten by dogs so many times that he did not at first suspect any connection between his latest bite and his uncontrollable nervous symptoms; the other point of difference was that instead of dying he recovered.

The author of the report had read Moon's article, "The Effect of Quinine on Rabies in Dogs" (Jour. Infect. Dis., 1913, xiii, 165), and in consultation with Dr. Ralph Kinsella, resident physician of the St. Louis City Hospital, decided to try the quinine treatment that had shown such a satisfactory effect on dogs in this hapless case of human rabies.

On August 29, 1913, at 5 p.m. they injected intravenously 15 grains (1.00 gm.) of quinine and urea hydrochloride dissolved in 45 minims (3.00 c.c.) of salt solution, and repeated the dose at 7 p.m., 9 p.m. and 11:30 p.m., and on the next day at 9:45 a.m. and 11:30 a.m., making 90 grains within twenty-four hours. Before beginning this treatment every attempt at swallowing liquid brought on a suffocating spasm of the throat muscles. In half an hour after the second dose he drank six ounces of milk without any difficulty, and all the pain in the bite and in the thigh, which had tormented him, had disappeared. On the next day, August 30, he ate bread and crackers and drank milk and coffee without any trouble.

On September 2, four days after admission to the hospital, he was discharged well. Now it is very true that "one swallow does not make a summer," but it sometimes suggests that summer is coming. Further experiments

of the kind will be earnestly expected, though the Pasteur treatment has rendered hydrophobia rare.

If quinine should prove to be a remedy for rabies its action is easily understood. The Negri body is perhaps a protozoon, as is the plasmodium malariae. Protozoa are but organized particles of protoplasm, and quinine is a protoplasmic poison, known to be fatal to the plasmodiae if in sufficiently strong solution. Can it be that when introduced into the blood serum in massive doses it is also fatal to the protoplasmic particle known as the Negri body? We can only wait and see.

But what a triumph of therapeutics, if true!

The Kansas City Journal of October 28 stated that Dr. Virgil H. Moon has gone from that city to Chicago, where he will study hydrophobia and the use of his treatment as a preventive. He was to enter the Memorial Institute for Infectious Diseases, where he will work with Dr. Ludwig Hektoen.

TWO POSSIBLE STEPS FORWARD.

It is an acknowledged desire of the profession generally to find if possible some chemical substance which, when dissolved and administered, will be diffused through all the tissues and will prove fatal or suppressive to pathogenic organisms while not affecting the normal tissues or organisms. With such an agent we could saturate the body to a degree incompatible with the existence of such bacteria as the diphtheria bacillus and similar organisms and yet not interfere with the proper conditions of life and health. Such reasoning led Ehrlich to the evolution of atoxyl and salvarsan. At a recent meeting of the Connecticut State Medical Society Dr. John W. Churchman, of New Haven, announced that for years he had noticed a sharply selected affinity between gentian violet and certain bacteria. "By the use of this dye one can pick out distinctly two kinds of organisms: one, absolutely unaffected by the dye; and the other, killed, if stained with it, and prevented from growing if gentian violet was added to the mediums in which it is planted."

The organisms killed by this dye are those which are stained by the Gran method. This includes poliomyelitis. If the findings of Dr. Churchman prove correct, we shall have another item in the development of chemotherapy.

Another step apparently in advance is reported by Dr. G. Jochmann in a German journal. It is to the effect that diphtheria antitoxin obtained from cattle instead of from horses has proved efficient in the prophylaxis of those cases in which it was used, seventy-nine in number, thirty-two of whom were young infants. No serious by-effects were noticed and none of those injected developed diphtheria later, although exposed. Jochmann hopes that the use of cattle antitoxin may lessen the danger of anaphylaxis. Should these two innovations prove as successful as their originators expect they will indeed constitute long steps in advance.

DESICCATED THYROID IN NEPHRITIS

Dr. J. F. Percy, in a paper read at the Minneapolis meeting of the A. M. A., advocates the use of desiccated thyroid in chronic nephritis. He has been clinically studying the subject for several years and is enthusiastic in his belief of its usefulness. The variety of nephritis he describes in his article is characterized by more or less oedema, casts, abundant albumen and a sp. gr. of 1008 to 1010. Also the urine is very scanty and the heart hypertrophied.

This description pictures chronic parenchymatous nephritis perfectly, but not the chronic inserstitial form which is generally considered to be true Bright's disease. However, it is more than possible that the same principles of therapeutics with modifications apply to the treatment of both forms, namely, the relief of high arterial tension. This seems to be accomplished by the administration of the desiccated thyroid in the manner he specifies. When it does not satisfactorily accomplish this,

Dr. Percy adds nitroglycerin and potassium iodid to the treatment, and in any event he administers Blund's pills freely to combat the anaemia.

The results in the cases reported were all that could be desired, and though not numerous, they warrant phyicians in repeating his methods, carefully watching the effects of the desiccated gland lest hyperthyroidism appear, though Dr. Percy declares it need not be apprehended "so long as the urine contains casts and albumen."

Rest in bed while taking the treatment is imperative.

The instructions given for the administration of the gland are a little confusing as for the proper intervals between doses. He first says that a two grain tablet every four hours is absolutely ineffective, and in the next sentence he says that he prescribes six 2-grain tablets a day for the first week, and after that ten tablets daily. The JOURNAL hopes to receive from Dr. Percy an explanation of this apparent contradiction.

According to him certain forms of nephritis are *not* benefited by this treatment. They are those caused by advanced heart or liver changes, or by tuberculosis, or by nephrolithiasis, or by an infection ascending from the bladder.

Of course destroyed tissue cannot be replaced.

(Later.) In reply to inquiry by the editor, Dr. Percy says there was an error in the published report, and that it was doses of one grain once or twice a day that he condemned as useless.

CAN WE HOPE FOR A SPECIFIC FOR TUBERCULOSIS?

In the *Kentucky Medical Journal* for June, 1913, there appears an article which discusses the above question, with special references to the claims of "Friedmann" and his boasted serum. The article is by Dr. Jacob Glahn, of Owensboro, Ky., and is worthy of thoughtful attention.

Dr. Glahn believes that the disease we call tuberculosis is really a condition of the system that invites the growth of a peculiar parasite called bacillus tuberculosis. His paper seems to teach that the production of an antitoxin curative of this condition is impossible, as the disease is not self-limiting. Whenever the condition of the system, that is, of the cell-life is normal, there is no soil in which the tubercle bacillus can grow or exist, and it disappears; but there is no antitoxin in the process. Hence the principles that apply in treating diphtheria and typhoid have no application in the treatment of tuberculosis. The presence of the tubercle bacillus in the system does not provoke the secretion of an antidote, as is the case in the two other diseases mentioned, consequently no serum can be hoped for which will be a specific for tuberculosis, and the Friedmann treatment cannot be curative. Only a restoration of the system to a condition of perfect nutrition can avail. Then, indeed, the bacillus, finding no proper soil, must die.

The position assumed by Dr. Glahn is logical. It is only for self-limiting diseases that we find satisfactory "specific" serums, and tuberculosis has never been credited of self-limitation.

THE WILLIAM H. WELCH ENDOWMENT AT JOHNS HOPKINS.

In "Science," for October 31, 1913, is an announcement, presumably by the editor, that "The General Education Board, endorsed by Mr. John Rockefeller, has appropriated $1,500,000 for the Johns Hopkins Medical School, to establish an endowment to be known as the William H. Welch fund, in honor of Dr. Welch, to whom the organization and development of the school are in a large measure due." The only restriction upon the fund is that it is for the purpose of reorganizing the departments of medicine, surgery and pediatrics upon a financial basis that will enable the "professors and their associates in the clinics and the laboratories" to devote their entire time to their work. These men will be free to "treat

any one, whether inside of outside of the hospital, but they will accept no personal fee for any such service." The article intimates that other medical men than those thus employed, men engaged in regular or special practice, will "to some extent" continue to be utilized, in the conduct of dispensaries and the teaching of students.

This is a long and splendid step in the right direction, but one that can be taken only by persons or groups controlling large sums of money. The clinical branches should be taught only by men whose professional success has placed them at the head of their fellows. Such men command such large fees for their services that only a princely salary can induce them to surrender the practice they have striven for and won, and place themselves in a position where others will be able to criticise or control their actions, or even to terminate the lucrative connection that induced them to abandon a practice hard to win, and paying better than any salary. Ten thousand dollars a year would hardly tempt a surgeon who can collect half that amount every month, and only a supreme loyalty to his profession could induce him to make the sacrifice. We shall watch this experiment with intense interest, for it *is* an experiment. We shall not only watch it, but we shall hope to see it extend its influence until many of our more Southern schools of medicine become beneficiaries of Southern men, who, having amassed a fortune beyond their own needs and that of their families, will follow the example of wealthy Northern men, and, either during their lives, or after they have passed away, will immortalize their names by endowing chairs in Southern medical colleges. Science lives forever, and any name identified with it or its instrumentalities will endure through all the generations, as an example worthy to be followed and an honor to the posterity of the donor. In every large Southern city there are men who, if the subject were properly placed before them, would be glad to direct in their wills that a part of their wealth should thus be devoted to the general welfare.

Patriotism and the love of humanity, combined with generous instincts, are at least as common in this part of the country as in any other. Surely the time is ripe for their fruition in generous deeds, such as are illuminating the names of so many of our Northern capitalists.

The present heads of the departments selected by the Fund are as follows: Medicine, Lewellys S. Barker; Surgery, W. S. Halstead; Pediatrics, John Howland. Three men more eminent in their respective departments would be hard to find in the country. It is almost too much to expect of them, but if they should decide to forego their present enviable advantages, even for the most liberal salary the Fund can afford, the profession everywhere would realize and appreciate the sacrifice they make for the sake of the most altruistic cause known to mankind—the prevention and relief of human suffering.

DOCTOR WM. HUDSON WATHEN.

Few men have lived to be more widely known and universally loved by an entire profession than the lamented physician whose name appears at the head of this article. He was a true son of Kentucky, an eminent physician and surgeon, and a great teacher of that department of medicine embraced in the titles of gynecology and abdominal surgery. For many years he was Dean of the Kentucky School of Medicine, which he founded and made a successful institution, and which was consolidated with the University of Louisville. He was an active member of most of the large medical and surgical societies in the United States. In 1907 his eloquence was recognized by the American Medical Association electing him its orator.

He was one of the founders of the American College of Surgeons and was the only Kentucky member of the American Gynecological Society. His friends were numbered by the thousands, and comprised

some of the most eminent men of America and Europe. He died at the age of 67 years, and in compliance with his expressed desire, his funeral was conducted with the greatest simplicity. He was buried in Cave Hill Cemetery at 11 o'clock a.m. on the 9th day of October, 1913.

SAFETY ONLY IN SANITATION.

The awakening of public consciousness to the imperative necessity of improved sanitation is one of the most hopeful portents of the twentieth century.

For the first time in human history there is a general realization that the excretions of the body, unless properly disposed of, afford the means to our deadliest foes by which they may destroy us, and the flies and hookworms are swift to utilize the opportunity. From multiplied thousands of open privies festering with filth, wriggling with maggots and charged with deadly germs, the flies flit joyously to the milk bottles of cooing babies or the dainties of the dining rooms, leaving trails of filth and poison hideous to behold through a lens. Numberless families have surrounded themselves with poisoned soil that infects their barefooted children with hookworms to prey upon their vitals. Schools and offices of professional men, in localities where there are no public sewers, depend upon unspeakable vaults, whose contents poison the wells and springs of the neighborhood.

Time was when such abominations were excusable, for there was no other way. Now they are not excusable, for there are other and better ways of disposing of excrementitious matter. The earth closet offers a simple and economical solution of the problem. It destroys all odor and renders the necessary exchanges of receivers easy. True it is somewhat troublesome and a little dusty and sometimes proper earth is hard to obtain. Another device, the chemical closet, is perhaps a little more expensive, but properly constructed, installed and operated, is entirely satisfactory.

It comes nearer to being as adequate as the regular water closet than any other device. At any rate whether the earth closet or chemical closet is selected, there is no longer an excuse for the germ-laden, fly-breeding, death-dealing privies or vaults that annually slay more victims than all other causes combined.

UNIFORMITY IN REGISTRATION OF VITAL STATISTICS.

The JOURNAL acknowledges the receipt of communications from the Bureau of the Census at Washington emphasizing the importance of uniformity and accuracy in the recording of vital and mortuary statistics.

Concerning the necessity of correct records there can be no doubt among thinking people. Experience has demonstrated that both the physical and the financial welfare of the people are seriously affected by such records or the lack thereof. The legal status and property rights of citizens have often depended entirely upon them. Next in importance to their correctness is their uniformity.

Vital and mortuary statistics are matters of national concern and not of interest only to the State wherein recorded. Congress, realizing this truth, urged by a resolution approved February 11, 1903, requested the several States to take favorable action on the matter, "to the end that the United States may attain a complete and uniform system of registration."

The South has not been prompt to respond to this request and has suffered in consequence. Recently, however, several of the Southern States have adopted a model law, uniform with national requirements, and gratifying success in securing reports has promptly followed. Unless, however, the systems adopted correspond with national forms their usefulness is largely limited to their own localities.

The government cannot keep a different style of books for each State, and consequently the statistics of such States are not generally available. When a prospective investor looks in the government records for the vital statistics of a State towards which his mind is directed and finds none that State is at once at a disadvantage compared with other States whose health and social conditions are

fully recorded in the government books and which are included in the so-called "registration area." Possibly the system retained by the "independent" State may be better than the one adopted by the government, but the exclusion of its statistics from the national records detracts immensely from its value. Moreover, experience has shown that the forms prescribed by the national government command more respect from the physicians and nurses upon whose interest their being satisfactorily filled out depends. Vital and mortuary statistics are national matters and no State can afford to be left out from the national records no matter what may be its opinion of them as compared with its own system.

THERAPEUTICS

MOTOR DEPRESSANTS.

Under this heading should be grouped such agents as are directly antagonistic in therapeutic doses, to the therapeutic doses of the drugs described as "heart stimulants." Such are Aconite, Veratrum and the Nitrites.

Aconite.

Aconite is an indigenous plant known to the laity as Monkshood.

The root is the official part and should contain not less than one half of 1 per cent of the principle, aconitine.

The official preparations are the Extractum Aconiti (Extract of Aconite), dose 1-6 to 1-2 a grain (0.01-0.03).

Fluid Extractum Aconiti (Fluid extract of Aconite), dose 1-10 to 2 drop (0.006-0.12 c.c.).

Tinctura Aconiti (Tincture of Aconite), 10 per cent strength, dose 1 to 15 drops (0.06-1.0 c.c.).

Aconitina (Aconitine), dose 1-500 of a grain (0.00012 gm.).

Aconitine amorphous, dose 1-150 of a grain (0.00043 gm.).

Wilcox considers acontina the most poisonous drug in materia medica. On account of its intense toxicity it was dropped from the U. S. Pharmacopoeia in 1880.

The tincture is the preparation most used. The latest revision of the Pharmacopoeia has established its strength at 10 per cent of the drug, ten drops representing one grain of the root. Previous to that the strength of the tincture was about 30 per cent. The dosage, therefore, recommended in medical works of ten or more years ago does not correspond with that now prescribed, the latter being two or three times as large. There is reason to suspect, however, that larger amounts are now and always were recommended in text-books than were calculated to serve the best purposes.

Externally applied tincture of aconite causes a sensation of itching and heat, or tingling, soon followed by numbness and anesthesia of the sensory nerve ends. On this account it has been successfully used in liniments for painful conditions of a superficial character.

When swallowed it causes a sense of tingling and constriction in the throat, and soon manifests its effects upon the circulation.

This effect varies very much according to the dose administered. If given one drop (0.06 c.c.) doses, repeated every hour and gradually increased until effect, it stimulates the inhibitory centers and so the action of the heart becomes slower, the disastole is prolonged, the systole is decreased, and a fall of blood pressure follows.

The dose should then be reduced to **one-half the amount last taken**, and continued every two or more hours if needed. On the other hand, if the dose be too large, or too often repeated, or continued too long, the drug acts as a direct irritant to the heart muscle, the pulse becomes rapid and irregular and the blood pressure fluctuates widely.

Aconite is used in sthenic fevers to lower the pulse and temperature, lessen blood pressure and induce perspiration. In the small doses used for this purpose it is also a sedative to the nervous system, encouraging calmness and rest. In pharyngitis, combined with guaiacum, it reduces the high fever and promotes recovery. It is recommended, combined with deodorized tincture of opium, in acute inflammations of the serous membranes, especially in the early stages of pleurisy or peritonitis.

It has been used with advantage in the high fevers of scarlatina and measles, often checking the catarrhal inflammations that complicate those diseases. It is useful in moderating excessive action of the heart in cases of hypertrophy or overcompensation.

According to H. C. Wood, Jr., it should never be

used in pneumonia, veratrum having proved far more valuable in that condition.

A combination of tincture of aconite with bromide of potassium has long been a favorite prescription in cases of children with the ephemeral fevers to which they are subject. For a child four years old one-eighth of a drop (0.008 c.c.) of the 10 per cent tincture, with two grains (0.12 gm.) of the bromide, dissolved in half a teaspoonful of aromatic elixir and given every half hour till the fever begins to subside, will do good service. It is safer and more effectual than the coal tar derivatives. Poisoning by aconite is difficult to remedy. No physiological antagonist that acts directly is known. Large doses cause death in a few minutes from paralysis of the heart. Smaller ones cause severe tingling of the mouth, soon followed by extreme weakness, nausea, perspiration, and pain in the cardiac region. The pulse at first beats wildly and then becomes too weak to be felt. There is difficult, shallow respiration and profuse salivation, with pallor and distressing restlessness. The mind remains clear until immediately before death, which is often preceded by convulsions. Death is caused by failure of respiration and asphyxia.

The treatment includes the emptying of the stomach with the tube, elevation of the lower extremities, maintenance of external heat, hypodermic injections of ether, strychnine, digitalin and the free use of alcohol and ammonia. Artificial respiration may sometimes be of use, and should be tried when the breathing shows signs of failure.

Many cases of fatal poisoning from aconite have occurred. When a lethal dose has been ingested the majority of the sufferers succumb. Digitalis seems logically a physiological antagonist, but is seldom satisfactory in such instances. Tannin temporarily renders it inert and should be given freely if available instantly. Otherwise it is useless. In prescribing aconite liniments the red label of **Poison** should be conspicuous on the bottle.

Veratrum Viride.

Veratrum viride is a powerful depresso-motor, slowing and weakining the pulsations of the heart and lowering the bodily temperature, but its results are apparently accomplished through different channels or by other means than those followed by aconite. It varies from that drug, indeed, in several important respects. It exerts no other influence over the peripheral sensory nerves than a severe degree of irritation. The drug and its preparations are not used externally, but one of its alkaloids, veratrine, is an ingredient of two official preparations, the oleate and the ointment. Veratrum is a systemic emetic, thereby causing a fatal dose, if such there be, to be ejected from the stomach. It affects the respiratory system almost not at all. Under its influence muscle fibers react to a milder stimulus, prolong the act of relaxation, resulting in slowing of the heart's pulsations and softening the pulse at the wrist. Its most valuable property seems to be its power to lower blood pressure.

In sthenic fevers, such as usher in certain cases of pneumonia, it meets the indications more perfectly than any other drug, as experience shows, while it is equally true that aconite is not so advantageous. After the fever has subsided, and is running a lower curve, veratrum is not admissible.

The preparation of veratrum viride most used is known as Norwood's tincture. It has proven so reliable that the official tincture can hardly compete with it, yet pharmaceutically it is said to be variable and impure.

In administering Norwood's tincture for sthenic fever it is well to begin with small doses and gradually increase. One drop (0.06 c.c.) at first, then in fifteen minutes two drops (0.12 c.c.), then every fifteen minutes adding another drop to the dose until the heart slows down or the pulse becomes softer. Then half the amount of the last dose should be administered every half hour or hour, according to the conditions, until no longer needed. The medicine should be given in little water, two teaspoonfuls being enough. Possibly nausea and complete relaxation may come on suddenly when the drug takes effect, the skin becoming moist with perspiration, the pulse weak and soft and the temperature falls rapidly. In such cases if the discomfort is severe it is well to moderate it, which is readily done by giving, to an adult, a fluid drachm of paregoric (4.0 c.c.) in another teaspoonful of water. No alarm need be felt at the apparent tendency to collapse. If the patient vomits, whatever of the medicine remained in the stomach will be ejected with the bile and glairy mucus and the paregoric will generally prevent even one repetition.

Another use for veratrum is for the relief of functional tachycardia. The patient should be sent to bed until relieved, and one drop of Norwood's tincture given every hour. Sometimes 24 or 36 doses are required. A case is recorded where the pulse, after the thirty-sixth dose, dropped in an instant from 150 per minute to 75, without nausea or other discomfort.

The enormous doses of Norwood's tincture of vertrum viride given for the control of puerperal eclampsia would seem to indicate that the fatal outcome of excessive doses seen in lower animals

is not to be apprehended when the drug is freely administered to human beings.

It is entirely possible that the condition of uraemic poisoning, which calls for such dosage, also counteracts the toxic properties of veratrum to a certain extent. Yet no conceivable pathologic condition could render it safe so to exploit tincture of aconite, in spite of the fact that some authors of books on materia medica declare that their effects are so similar that what is said of one applies equally to the other.

I have dwelt upon this point of the difference between the effects of the two drugs because so many of our text-books on materia medica, therapeutics and on practice proclaim their identity in action, one following the lead of the other, evidently without clinical demonstration.

Veratrum is a tool with sharp edges, ready to the skilled hand, dangerous to the comfort of a patient if improperly prescribed, but is not a lethal poison to man, so far as clinical experience can indicate.

In puerperal eclampsia 15 or 20 drops (1.0-1.29 c.c.) are given hypodermatically every one or two hours according to results. It is necessary to success that the prostrating powers of the drug should be evidenced to a moderate degree, such as flaccidity of the muscles, nausea and perspiration, and, especially, a reduction of the pulse rate to 50 or 60 per minute, with its accompanying fall in arterial pressure, which has been known to reach 320 m.m. (Hirst). It will do no harm to repeat the statement that the camphorated tincture of opium, probably on account of its peculiar combination of alcohol, opium, camphor and anise, acts more specifically as an antidote than any other drug or combination. At least, such is the experience of the writer.

BOOK REVIEWS.

A Treatise on the Diseases of Women. For Students and Practitioners.

By Palmer Findley, B.S., M.D., Professor of Gynecology, College of Medicine, State University of Nebraska; Gynecologist in the Clarkson Memorial Hospital and Douglas County Hospital; Fellow of the American Gynecological Society; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the Chicago Gynecological Society. Octavo, 954 pages, illustrated with 632 engravings in the text and 38 plates in colors and monochrome. Cloth, $6.00 net. Lea & Febiger, Philadelphia and New York, 1913.

This book is the natural outgrowth of the author's "Diagnosis of Diseases of Women," and stands today as one of the most complete and carefully written texts concerning the diseases peculiar to women. It deals with the non-operative procedures as well as the operative methods of treating disease. Very interesting chapters are included on the subject of "Hygiene and Dress," preparation of the patient for operation, preparation of the operating room, and post operative care of the patients. A feature of the book is the emphasis of the conservative methods of treatment. Diagnosis has been placed on anatomical basis, both microscopically and macroscopically, and this is a logical method, for the recognition of diseases of women depends largely upon the recognition of the morbid anatomy present. This text is unqualifiedly recommended to the profession, both the practitioner and the student.

Anatomy, Descriptive and Applied.

By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. New (English) edition, thoroughly revised and re-edited, with the Basle anatomical nomenclature in English, by Robert Howden, M.A., M.B., C.M., Professor of Anatomy in the University of Durham, England. Imperial octavo, 1,407 pages, with 1,126 large and elaborate engravings. Cloth, $6.00 net; leather, $7.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

The hitherto unprecedented popularity of Gray's Anatomy has been marvelous, though easily explained on the grounds of utility and accuracy. The sphere of usefulness is being broadened by this English edition. The most prominent modification is in the employment of the Basle nomenclature. Much of the subject matter is the same as in the American edition, but the rearrangement of some parts makes it easier as a reference book, particularly the applied anatomy. The descriptions of surface anatomy have been collected into one section. Altogether it appears that this is a distinct improvement on the former editions, and as such will no doubt enjoy a wider popularity.

Diseases of the Bones and Joints.

Clinical studies by Joel E. Goldthwaite, M.D., Charles E. Painter, M.D., and Robert B. Osgood, M.D. Illustrated, 685 pages. W. M. Leonard, Publisher, Boston, Mass.

In all the various works on the subject of bone and joint diseases there is none more practical and perhaps more serviceable to the profession. This book is written not as an exhaustive treatise on orthopedic surgery, but as a clinical survey from the vast experiences of these eminent orthopedic surgeons, emphasizing the essentials of diagnosis and treatment and presenting much valuable information which has come from research and investigation. Nowhere is there a more complete description of the non-tubercular arthritides, employing the classification of Goldthwaite, of hypertrophic, atrophic and infectious arthritis. Those who do not already possess a copy of this excellent work should by all means secure one now.

Zoology.

By Thomas Walton Galloway, Ph.D., Professor of Biology in the James Millikin University. Second edition, revised; 240 illustrations. Octavo, 460 pages. Cloth, $2.00. P. Blakiston's Son & Co., Philadelphia, Pa.

While this book seems especially adapted to the purposes of teaching in high schools and colleges, the principles of zoology are so presented that it is a most excellent text for the student of medicine, graduate or undergraduate, and is a valuable guide to those interested in natural history. It begins with the simpler facts of physiology that are fundamental to living organisms, working from the simple cell to the complex animal. There is then a general review of the animal kingdom, followed by careful descriptions of the individual constituents, from the protozoa to the mammalia.

The Elements of Bacteriological Technique.

By J. W. H. Eyre, M.D., Director of the Bacteriological Department of Guy's Hospital, London. Second edition, rewritten and enlarged. Octavo of 518 pages, with 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.00 net.

With the student in the laboratory or the individual investigator in his own laboratory this compilation of bacteriological methods meets a welcome seldom accorded a purely laboratory guide. It describes the laboratory regulation and equipment, the methods of examination, staining and growing of bacteria, with the improved ways of demonstrating the bacteria in tissues. The essentials of bacteriological analyses and post-mortem examinations are carefully detailed.

Obstetrics. A Manual for Students and Practitioners.

By W. P. Manton, M.D., Professor of Obstetrics and Clinical Gynecology, Detroit College of Medicine, Detroit, Mich. Second edition, revised and enlarged; including selected list of State Board examination questions. 12mo, 292 pages, with 97 engravings. Cloth, $1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

In carefully looking over this little book one is impressed by the fact that it is not a compend, but a manual, briefly presenting every subject that is elaborated on in the larger texts. This is a distinct advantage in meeting its twofold purpose, as a convenient manual for the physician to quickly review the subject and for the student in preparing for examinations in obstetrics. The excellent qualities can best be appreciated by a personal examination of the book, which every one interested is advised to do.

Essentials of Prescription Writing.

By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32mo of 115 pages. W. B. Saunders Company, Philadelphia, London, 1913. Cloth, $1.00 net.

A very succinct, practical manual for the guidance of student and practitioner in the art and science of writing prescriptions. It has a distinct field, and meets that demand in every particular.

Pathology, General and Special.

A manual for students and practitioners. By John Stenhouse, M.A., B. Sc. (Edin.), M.B. (Tor.), formerly demonstrator of Pathology, University of Toronto, Toronto, Canada. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12mo, 278 pages, illustrated. Cloth, $1.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Those who have referred to this series of epitomes in other subjects will readily acknowledge the usefulness in reviews and quick references, for the subject matter is always authentic and modern. This work is not different from the rest in this respect. Particularly valuable to medical students, but not exclusively so, for it represents a brief presentation of pathology, general and special, just as it stands today, so that its contents can be relied upon by everyone.

Surgery of the Vascular System.

By Bertram W. Bernheim, A.B., M.D., Instructor in Surgery, The Johns Hopkins University, Baltimore, Md. 53 illustrations, 104 pages. Price, $3.00. J. B. Lippincott Co., Philadelphia and London.

The value of a certain amount of experimental or laboratory work before attempting clinical vascular surgery is emphasized. To those interested, this text becomes a practical and suggestive guide. It details the methods employed by the leading surgeons, as well as some of his own methods. There will be found discussions of technique in general, transfusion, end to end sutures, lateral anastomosis, transplantation of segments of artery or vein, arterio-venous anastomosis, varicose veins, surgery of the heart, and aneurisms. While not a voluminous work, it is clear and definite, as well as complete, and it will command recognition on the part of those interested in this important and growing subject.

Alabama Officials and Statistical Register, 1913.

By Thomas M. Owen, LL.D., Director, Montgomery, Alabama.

Published biannually by the director, this register comes out for the year 1913, containing interesting statistics and information, with sketches of the various state officials and national representatives, judges, and county officials. It is well written, and will meet with general approval.

Treatment of Internal Diseases for Physicians and Students.

By Prof. Norbert Ortner, University of Vienna. Edited with additions by Nathaniel Bowditch Potter, M.D., of Columbia University. Translated by Frederick H. Bartlett, M.D., of Columbia University. Second edition in English, revised and reset from the fifth German edition. 643 pages. Price, $5.00. J. B. Lippincott Co., Philadelphia and London.

A feature to be appreciated is the fact that the best European therapy is combined with the distinctly American, which increases the value of a work devoted entirely to treatment. It is unusual for so complete and comprehensive work to be confined to a single volume. It presents the

accepted treatment in diseases of the circulatory organs, the genito-urinary tract, the blood, of metabolism, the mouth, larynx, bronchi, lungs, pleura, stomach and intestines, peritoneum, liver and gall bladder, acute infectious diseases, psychasthenia and neurasthenia. It is a most excellent treatise, and one that every physician should possess.

A Practical Treatise on Medical Diagnosis.

For students and physicians. By John H. Musser, M.D., LL.D., late Professor of Clinical Medicine in the University of Pennsylvania; formerly President of the American Medical Association, etc. New (sixth) edition, revised by John H. Musser, Jr., B.S., M.D., Instructor in Medicine in the University of Pennsylvania; Assistant Physician to the Philadelphia Hospital; Physician to the Medical Dispensary of the Presbyterian Hospital; Physician to the Medical Dispensary of the Hospital of the Universty of Pennsylvania. Octavo, 793 pages, with 196 engravings and 27 colored plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

An evidence of the value of diagnosis in treating disease is clearly defined by the vast number of works constantly appearing which deal with the problems and the methods of diagnosis. It seems that this is an age of diagnosis rather than of treatment, and correctly so, for this is the first fundamental in successful treatment. One is bewildered by the number of texts available, and so it is well for him to know some of the standards. This work of Musser has ever held a high place in the profession, and certainly this new edition will meet the same welcome and demand that former ones have enjoyed. It deals with the subject under the following subdivisions: General diagnosis, subjective diagnosis, objective diagnosis, physical diagnosis, laboratory diagnosis, and special diagnosis. Many interesting facts are given under the discussion of internal secretions and their disturbances. The whole subject matter has been carefully inspected and in many instances rewritten.

Hand Book of the Mental Hygiene Movement and Exhibit, and Proceedings of the Mental Hygiene Conference and Exhibit.

Published by The National Committee for Mental Hygiene, 50 Union Square, New York City.

These are two very interesting and instructive pamphlets which deal with the valuable work of the Mental Hygiene Movement. The hand book is sent prepaid for 20 cents. The proceedings, containing many instructive addresses on topics related to this movement, will be found useful to those interested in such work.

The Institution Quarterly.

Vol. IV, No. 2. A. L. Bowen, editor-in-chief, Springfield, Ill.

This quarterly is "issued jointly by the State Board of Administration, State Charities Commission and the State Psychopathic Institute, to reflect the public charity service of Illinois; to publish the results of its investigations and researches in the manifold questions of care and treatment of all classes of state wards and to lead the way towards a harmonious co-operation and co-ordination of all public and private agencies throughout Illinois which at any point touch the problems of philanthropy, charity and social betterment."

Obstetrics for Nurses.

By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (4th) edition. 12 mo of 508 pages; fully illustrated. W. B. Saunders Co., Philadelphia and London, 1913. Cloth, $2.50 net.

There is always a demand for new editions of any progressive subject. While certain of the fundamental facts of obstetrical nursing remain the same from year to year, there are new methods and new procedures found to be of great value which can only be incorporated in a text by bringing out a new edition. This is the only apology for this new work, which in itself is worthy of the same reception that other editions have been accorded.

An Introduction to the Study of Infection and Immunity, Including Serum Therapy, Vaccine Therapy, Chemotherapy and Serum Diagnosis.

By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. New (2d) edition, thoroughly revised. Octavo, 325 pages; illustrated. Cloth, $3.25 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

The first edition of this excellent work is scarcely a year old, but its rapid exhaustion has demanded a second edition, which greets the profession with many new and valuable results of a marvelously advancing experimental medicine. Some of the notable achievements of the past year which are added are concerning auto and normal serum therapy, serum diagnosis of pregnancy, chemotherapy of pneumococcus infections and of cancer. The various diagnostic methods of syphilis are clearly described. This new edition is certain of just as universal a reception as the former received, and the work justifies this popularity.

Minor and Operative Surgery, Including Bandaging.

By Henry R. Wharton, M.D., Professor of Clinical Surgery in the Woman's Medical College, Philadelphia. New (8th) edition, enlarged and thoroughly revised. 12 mo, 700 pages, with 570 illustrations. Cloth, $3.00 net. Lea & Febiger, Philadelphia and New York, 1913.

The real value of a book can be measured by the number of editions through which it has passed. The fact that Wharton's Minor and Operative Surgery has lived through eight editions is a just commentary on its great ability and convenience, based on intrinsic value. Not only does it describe all the various methods of immobilization and dressings in surgical conditions, but it

demonstrates them by excellent illustrations, usually by steps in the procedures. This new edition presents modern, up-to-date methods in minor as well as some of the major surgical conditions.

Studies Concerning Glycosuria and Diabetes.

By Frederick M. Allen, A.B., M.D. 1179 pages. Harvard University Press, Cambridge, Mass. W. M. Leonard, publisher, Boston, Mass., 1913.

The subject of diabetes has heretofore been a medical problem full of confusion and theories, and to keep pace with other lines of investigation in a marvelously advancing experimental medicine, it is well for this subject of diabetes and glycosuria to receive its share of research in an effort to further elucidate its true nature. Working in the Department of Preventive Medicine and Hygiene of Harvard University, the author has collected and compiled the results of his experimental research along the line of administration of different carbohydrates and pancreatic operations in an effort to reproduce a typical glycosuria. The relations of varied structures and organs to the phenomenon of glycosuria were carefully investigated. A bibliography of glycosuria and diabetes is appended, bringing it up to date. The work as a whole reflects credit on the care and painstaking efforts of the investigator in all his experimental work, and the results should command the interest of every member of the profession in familiarizing himself with medical progress.

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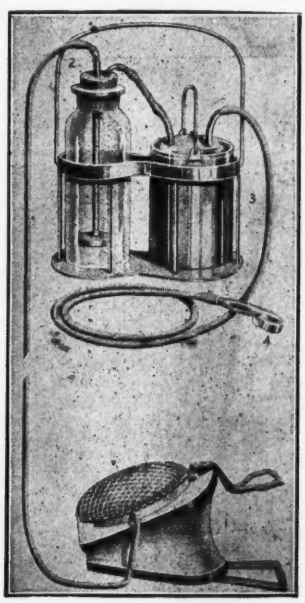

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SOUTHERN MEDICAL NEWS

ALABAMA.

In Etowah County, Dr. J. W. Cox has been elected county physician for the unexpired term of Dr. W. C. Williams, who has left the city.

The Talladega County Medical Society has elected the following officers for the ensuing year: President, J. A. Sims; Vice-President, D. P. Nixon; Secretary, D. B. Harris; Treasurer, T. K. Mulleins; County Health Officer, B. B. Simms; City and County Physician, E. P. Cason.

At Montgomery, on the 15th of October, the surgeons of the Atlantic Coast Line Railway, met in convention. Dr. J. N. Baker, of Montgomery, was elected President for the coming year; Dr. A. M. Brailsford, of Mullins, S. C., First Vice-President; Dr. P. P. Lane, Waycross, Ga., Second Vice-President; Dr. C. P. Almar, Charleston, S. C., Secretary-Treasurer. The next meeting will probably be at Savannah, Ga.

At Tuscaloosa, on October 16th, at the annual meeting of the Trustees of the Alabama Brice Insane Hospital, Mr. Sam Will John, of Dallas County, was elected President for the coming year, and Dr. W. M. Faulk, of Tuscaloosa, Treasurer.

At Girard, on October 20th, the Russell County Medical Society elected Dr. R. B. McCann, of Seale, County Health Officer, to succeed Dr. W. B. Prather.

Dr. T. M. Leatherwood, of Tuscaloosa, died Wednesday, October 8th, at Asheville, N. C., and the remains were brought to his home town for burial. His wife and one son survive.

In Mobile County, October 9th, a campaign against hookworm was begun under the direction of Dr. Carl E. Grote, of the Rockefeller Commission. He will probably remain at Mobile until late in December. He says there are 200,000 cases of hookworm in Alabama, 32,000 of whom have been treated. He co-operates with the local health officials.

At Birmingham, on October 23rd, Dr. W. P. McAdory gave a dinner at the Hillman Hotel in honor of Dr. R. M. Cunningham, who was recently married. He had just returned from his bridal trip, which included New York and Washington. All alumni of the Birmingham Medical College were invited.

Dr. W. W. Dinsmore, State Director of Public Health, could not attend the Lexington meeting, as the physicians in Walker County needed his aid at the time in their efforts to have a "full-time" county health officer appointed. It is an effort that should be imitated in every county in every Southern state.

ARKANSAS.

Malvern, October 3rd. Dr. W. G. Hodges, of Social Hill, has been named physician for the Malvern and Camden Railway Company.

At Little Rock, Dr. J. P. Dooley has been named to succeed Dr. Verne Stover as superintendent of the City Hospital, Dr. Stover having recently resigned to accept a position in China.

At Plumerville, October 7th, an aged physician, Dr. J. N. Mitchell, was found on his farm near the town lying dead behind his plow. His faithful horse had stopped when he fell and remained motionless until the body of his master was discovered. His age was seventy, and the cause of death was some form of heart disease.

NORTH CAROLINA.

At Charlotte, Dr. F. O. Hawley, city physician, is said to have vaccinated 1,000 children, white and colored, in a month. Cumpulsory vaccination and compulsory education together account for the number.

At Asheville the salary of the county health officer had been increased to $2,500 per annum, and

(Contained on advertising page 20.)

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The water was excellent from a sanitary standpoint.

Respectfully submitted,
THE COLUMBUS LABORATORIES.
January 26, 1907. Chicago.

MEDICAL NEWS

(Continued from advertising page 18.)

Dr. D. E. Sevier, the present incumbent, will devote his whole time to the work.

At Greensboro the Guilford County Medical Society held its regular monthly meeting in the Carnegie Library, on the 2nd day of October. About fifty people were present. Interesting papers were read, and after the meeting refreshments were served in the Dixie building.

On October 14th, Dr. C. W. Stiles, U. S. M. Hospital and P. H. Service, visited Kinston and remained for two days investigating sanitary conditions. He delivered a public address while there and suggested measures for the improvement of local health conditions.

At Raleigh the Wake County Medical Society met October 18th, in the Chamber of Commerce. Fifty members were present. The subject discussed was pellagra and the arsenic treatment.

On the 15th of October there was a meeting of the whole-time county health officers, at which Dr. Rankin, Secretary for the State Board of Health, was present. Only ten were at the meeting, but Dr. Rankin states that North Carolina now has more whole-time county health officers than any other state in the Union and its public health work is further advanced. Their salaries range from $1,800 to $2,000 a year.

At Rocky Mount, Drs. Lane, Hornegay and Staley have completed their elegant new hospital building, and opened it for public inspection on Monday, October 13th. Miss J. E. Stiff, the head nurse, with ten assistants, presided.

The board of managers of the Asheville Mission Hospital has elected physicians for the staffs for the coming year. It is composed of Dr. M. H. Fletcher, chief, and nine other physicians for the regular staff, and still other seven as an adjunct staff. Most of the old staffs were re-elected, although they had previously sent in their resignations.

SOUTH CAROLINA.

At Charleston, October 2nd, Dr. Robert L. Brodie died at his residence. His health had been declining for some time. He was 84 years old, an old Confederate officer, and was very highly esteemed as a man and as a physician.

At Spartanburg the physicians are planning to maintain through the winter the Pellagra Hospital, which was established there for the Thompson-McFadden Pellagra Commisison. The report of Dr. B. F. Kaupp, health commissioner, shows that of thirty-three deaths in Spartanburg during one month last summer fourteen were from pellagra.

At Eiloree, Dr. Samuel W. Bookhart died at his home unexpectedly. He was 84 years old, widely known and highly esteemed.

At Charleston, October 19th, the Charleston County Medical Association held its third public meeting. Dr. William S. Penn, of Atlanta, addressed them.

At Abbeville, the Third District Medical Association held its semi-annual convention, with 32 members present, in the latter part of September. Dr. F. W. S. Bailey, of Clinton, was elected president.

The Greenville County Medical Society is assembling a modern research library of medicine and kindred branches of science. The city council has been requested to afford a room in the city hall for the keeping of the books. They will be at the service of members throughout the county.

At Yorkville, on October 16th, the York County Medical Society met in Dr. J. M. Walker's office. About twenty of the doctors of the county were present.

At Sumter the physicians of Tuomey Hospital organized by electing J. A. Mood, chairman; H. M. Stuckey, vice-president, and Carl B. Epps, secretary. They recommended to the trustees that the building be renovated and equipped to meet modern requirements.

The Lexington County Medical Society held its annual meeting on Wednesday, October 8th, in the town of Batesburg. Important papers were read by home and visiting physicians.

FLORIDA.

At St. Petersburg the physicians have organized a county medical society under the name of the Pinellas County Medical Society. This county has recently been formed from Hillsborough County. The following officers were elected: Dr. D. B. Dickerson, Clear Water, President; Dr. A. T. Albaugh, Tarpon Springs, Vice-President, and Dr. W. M. Davis, of St. Petersburg, Secretary-Treasurer.

At Jacksonville Dr. M. B. Herlong is puzzled to know what the city will do with its charity cases after January first. There will no longer be any hospital, the commissioners having no legal authority to operate one. It is suggested that they buy a "poor farm" for the purpose, as that would be within their charter rights.

At Tallahassee, the capital, the Board of Commissioners of State Institutions have decided that the physician for the State Prison Farm that is to be located in Bradford County shall be required to devote his entire time to the medical needs of the inmates of said farm. His salary will be $1,800 per year, and he will be provided with a house.

At Jacksonville there has been considerable alarm about diphtheria. About the middle of October there were some 15 cases among school children, and there were several "carriers" who did not develop symptoms. The disease was soon stamped out.

The doctors in Florida are very much dissatisfied with the privilege tax of $15.00 which has been placed upon them. Many protests are heard. It is a state and county tax.

GEORGIA.

The Atlanta Medical College opened its 59th session in October, with many more students than were expected. The freshman class numbers 80, which is 22 more than that of last year.

Governor Slaton has cummuted the sentence of Dr. McNaughton from hanging to imprisonment

(Continued on advertising page 22.)

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MEDICAL NEWS

(Continued from advertising page 20.)

for life. He was convicted of murder in the first degree.

At Augusta the freshman class of the medical college of the University of Georgia is composed of seventeen men from South Carolina and Georgia. The faculty contemplates changes in the curriculum which will increase the length of the courses following this to five years.

Eleven employes at the office of the state board of health in the capitol are suffering with diphtheria. Only two of the corps escaped. The infection came in the mail, through which careless doctors send pieces of suspected membrane for examination, and often fail to wrap them securely. Thus a whole sack will become infected. The country physicians have been warned not to send specimens merely placed in an envelope between two pieces of paper, but they persist.

At Atlanta, beginning October 14th, the newly organized State Board of Medical Examiners, composed of two eclectics, two homeopaths and six regulars, began examining applicants for license to practice medicine. Fourteen white applicants and eight negroes applied.

At Atlanta, Dr. T. W. Hughes, an advertising doctor, was summoned before the state board and notified that his advertisements were in violation of the new law, and that his license would be revoked if they were continued.

At Savannah the U. S. Marine Hospital issued a notice on October 18th, that all patients with pellagra would be received and treated free of all charges except transportation to and from the city, and even such charges might be arranged for in exceptional instances. Complications, such as tuberculosis or insanity, would prevent their reception. Communications should be addressed to "The Medical Officer in charge, U. S. Marine Hospital, Savannah, Ga."

The new State Board of Medical Examiners organized by electing the following officers: President, J. W. Palmer, Ailey, Ga.; Vice-President, G. Flemming, Waycross; Secretary and Treasurer, C. T. Nolan, Marietta.

The Macon News of October 22nd records the death of Dr. H. A. Mettauer, one of the pioneer citizens of that city. He died at the home of relatives in Farmville Va., where he was visiting. He was nearly 88 years of age.

KENTUCKY.

At Louisville, October 9th, the funeral services for Dr. William H. Wathen were held at ten o'clock, in the chapel of St. Anthony's Hospital. The pallbearers comprised many of the leading physicians of the city. The burial was at Cave Hill cemetery.

At Glasgow, on October 20th, Dr. C. W. Froedge was injured by a fall from his horse. His right arm was fractured between the wrist and the elbow. He set it himself, bandaging it with two handkerchiefs he had in his pocket, and then walked to his home, a mile distant.

In Scott County, about the middle of October, diphtheria became epidemic and five public schools were closed.

In Louisville, October 21st, Dr. Thomas James, thirty-five years of age, committed suicide by shooting, in his office at the corner of Third and Broadway. He had been in poor health for years.

At Pikeville it is said that a case of the rare disease known as scleroderma has appeared in the person of a white child named Ruth Ward, aged four.

Dr. G. Frank Russell announces his removal with his sanitarium from Dawson Springs to Louisville.

MARYLAND.

At Annapolis, in the middle of October, out of 800 midshipmen only three were in the hospital, and their ailments were of a minor character.

The Baltimore Health Department demands that vent pipes shall go up inside of buildings, and they are sustained by the plumbers, while the builders contend that the pipes should go up outside. A bitter contest is being waged, and in the city council, as well as in the committee on health, opinions are much divided.

The Health Board of Brooklyn has closed Public School No. 5 on account of the appearance of diphtheria among the pupils. This occurred during the latter days of October, when one pupil had died and several others were seriously ill.

At Cumberland, October 13th, Dr. Oscar Fisher was severely if not fatally injured when his automobile rolled over an embankment fifty feet high and he was pinned under the car.

At Hagarstown, October 19th, Dr. J. H. Besore, of Smithsburg, was buncoed out of $1,000 by sharpers, who induced him to bet on a phony horse race.

At Warren, and at Beaver Dam, the public schools were closed October 10th, on account of diphtheria.

The Johns Hopkins Hospital has applied for a permit to erect an additional story on one of the buildings. All available ground space is already covered and more room is imperatively needed.

At Hagarstown, October 21st, an inspection of the public water supply from the Cavetown reservoir showed pollution. It is mountain water and the board considered it more dangerous than the Antietam creek water, which is now purified and filtered.

The health authorities of Baltimore announce that the city drinking water is now free from disease germs. The queer taste and odor arise, they say, from the alum and calcium with which it is purified. However, the people are still advised to continue boiling their drinking water. The water engineer will ask the board of estimates for an appropriation of $12,500 for the purchase of chemicals with which to remove the bad taste.

The Johns Hopkins Medical School has been given $1,500,000 by the General Education Board, the distributors of John D. Rockefeller's gifts for education. It is to be called the William H. Welch Endowment for Clinical Education and Research, in recognition of his great services to medical education. The interest is to be used to pay the salaries of the professors of medicine, surgery and pediatrics and their assistants, all

(Continued on advertising page 24.)

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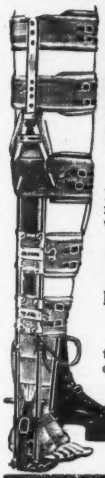

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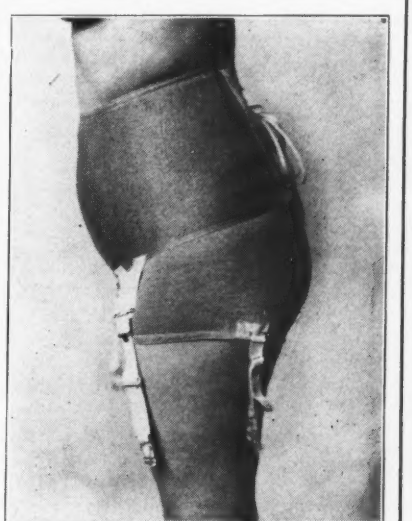

BOLEN MANUFACTURING CO. 302-303 Boston Store Bldg OMAHA, NEB.

MEDICAL NEWS

(Continued from advertising page 22.)

of whom are to devote their whole time to the work. The heads of departments are as follows: Medicine, Lewellys S. Barker; Surgery, W. S. Halsted; Pediatrics, John Howland. It is said to be the largest gift ever bestowed at one time upon any educational institution.

LOUISIANA.

The State Board of Health of Louisiana is investigating the cause of death of a prominent woman at Ferriday. She took the prescribed dose of a patent medicine, a tablespoonful, at 9:30 a.m., and at 1:30 she was a corpse. Analysis showed the stuff to be a solution of arsenic five times more powerful than Fowler's Solution. The name of the patent medicine is withheld. It should contain alcohol, but there was no alcohol in the bottle.

The physicians of Hancock County and Bay St. Louis met at the courthouse October 18th. About five doctors were present. Their object was to organize the profession in the county.

At Vivian a doctor, T. M. Toller, was arrested for issuing unlawful prescriptions for the purpose of evading the prohibition law.

At New Orleans, out of 279 establishments examined only five were found in a satisfactory sanitary condition. Sixty-four places where food and drink are sold were graded as "poor," and 96 as "poor or bad." Of the restaurants 26 are reported "poor or bad," against one returned as "excellent," and nine as "good." Of fifty wine cellars only eight were even fair.

Dr. R. E. Swaggert, Medical Superintendent of the United Fruit Companies and professor of sanitation in the Tulane School of Tropical Medicine, has been transferred to Boston.

Dr. Sidney Montegut, of St. John Parish, has sued the Y. & M. V. R. R. Co. for $1,500 for professional services rendered at the Montz wreck in 1912. He claims credit for having saved several lives from flames and relieving many sufferers, thus saving the railroad from heavier damages.

The State Board of Health reports that during the last three months it has examined nearly 7,000 patients, of whom 3,442 were found to be afflicted with hookworm. The total number treated in the state during the campaign was 44,611.

At New Orleans, the Chinese owners of laundries and wash houses, and white and colored owners of pressing and cleaning establishments, overran the City Board of Health October 21st to get the places registered under the new laundry ordinance. One hundred and thirty-seven Chinamen registered, leaving only eight delinquents.

The City Board of Health of Shreveport has petitioned the city to increase their appropriation for health work from $5,000 to $12,500.

MISSISSIPPI.

On October 3rd, the Washington County Medical Society held their regular meeting at Greenville, in the city hall. Dr. E. G. Martin, of Benoit, President, and Dr. Paul G. Gamble, Secretary. Fifteen members were present.

Dr. W. H. Rowan, municipal public health inspector of Mississippi, paid Columbus an official visit on October 18th. He found several merchants and market men whose establishments were not properly screened and affidavits were sworn out against them.

At Meridian, October 22nd, Dr. M. J. L. Hoye, County Health Officer, visited the city public schools. He is making a tour of all the schools in the county and lecturing on hygiene and sanitation.

At Long Beach a private sanatorium for the treatment of nervous diseases and cases convalescent from illness has been opened by Dr. Rives A. Manker, formerly Assistant Neurologist, University of Tennessee Clinic, at Memphis. The sanatorium is situated on the beach, three miles from Gulfport, and is fully equipped.

OKLAHOMA.

At Perry, Sheriff C. L. Hoover, of Noble County, has placed under arrest a Dr. Cosillie, a negro with a Spanish name, who has been pretending to practice medicine over the state without a license. His card represented him as a partner of Dr. Conrad, in the sanitarium at Guthrie, but Dr. Conrad denies knowing the fellow.

At Bartlesville, on October 14th, about two hundred physicians met for the second annual session of the Northeast Oklahoma Medical Society. Luncheon was served at the Elks Club.

The medical fraternity at Blackwell recently bought the Baptist College building at sheriff's sale for the purpose of establishing a first-class hospital with modern equipment.

The State Board of Medical Examiners has been ordered by District Judge J. J. Carney to restore to Dr. W. E. Doan, of Miami, his license to practice medicine and surgery, which they had revoked on October 12, 1911. He had been practicing medicine sixteen years when his license was revoked. The charge was that he had obtained it by fraud. Another case now before the board is that of W. F. Gordon, of Cotton County, which will probably not be tried before January. The charge has not been reported to this office.

TENNESSEE.

After the present year the term of the Medical Department of Vanderbilt University, will be lengthened to nine months, to correspond with the other departments.

Dr. John A. Witherspoon, Dean of the Medical Department of the Vanderbilt University, has returned from an extended trip through Europe. During his absence a social club bearing his name was organized in his honor by members of the senior class in the medical school, twenty-one in number.

Dr. J. B. Steele, city physician of Chattanooga, has been appointed chief of staff of the Erlanger Hospital.

Dr. John Allan Gentry, of Chattanooga, has been appointed chief surgeon of the Southern Bell and Cumberland Telephone and Telegraph Companies, with headquarters in Atlanta.

At Knoxville, seventy-five students have matriculated in the medical department of the Lin-

(Continued on advertising page 26.)

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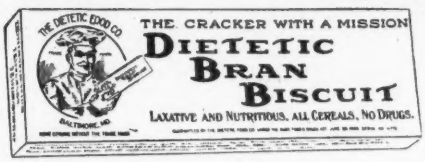

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MEDICAL NEWS

(Continued from advertising page 24.)

coln Memorial University. Twelve seniors are enrolled.

Dr. G. B. Tucker, County Health Officer of Davidson County, reports that there are now two cases of spinal meningitis in the county, one at the Isolation Hospital and the other at the penitentiary.

The East Tennessee Medical Association convened at Rogersville October 9th, in the auditorium of the National Pressmen's Home. Quite a number of the Knoxville physicians were present and participated largely in the exercises.

Dr. G. B. Thornton, of Memphis, one of the oldest and most prominent physicians in the State of Tennessee, went to Hot Springs late in October to visit his old friend, Dr. J. M. Kellar, whose eighty years are weighing heavily upon his head. Dr. Thornton is paying in kind for a similar visit when he himself was sick nigh unto death.

Dr. T. M. Ransom, a negro physician of Memphis, has been convicted of receiving stolen property and sentenced to one year in the penitentiary. A new trial was asked for.

TEXAS.

At Hardin, eight miles north of Liberty, on October 9th, Dr. J. F. Rogers was shot and instantly killed, a shotgun loaded with buckshot being the weapon. Only one shot was fired, but it took effect just above the heart. There were no eye witnesses, but a man, name not stated, has surrendered to the sheriff.

At Dallas, on October 1st, the medical and pharmaceutical departments of the Southern Methodist University were opened for the eleventh annual session of the school. The standard now demands for matriculation fourteen units of school work and one year of college work. It also employs six full-time professors on the faculty, as required by Class A colleges. It is expected that over one hundred students will be enrolled during the prescribd limits.

The Bee County Medical Society met at Beeville October 2nd, at the office of the President, Dr. J. H. Neeley. An honored guest was Dr. J. M. Wardlaw, of Corpus Christi, councillor of the sixth district.

The State Medical College, at Galveston, opened October 9th, with 158 students in the school of medicine and 58 in pharmacy.

At Austin it is the intention of the university authorities to have every freshman undergo a thorough medical examination upon entrance, and record cards made. During the session a strict watch will be kept over their physical welfare.

At Wharton, October 14th, the Eighth District Medical Association met as the guests of the Wharton County Medical Association. There was a large attendance.

At Texas City, October 14th, Capt. Edward W. Miller, assistant surgeon of the Sixth Cavalry, died at Field Hospital No. 3, from a malignant attack of blood poisoning, following a compound fracture of the leg.

At Graham, October 14th, the Northwest Texas Medical Society held its forty-first annual session, with a large attendance. Dr. L. P. Reaves, of Decatur, presided.

At Corpus Christi, October 13th, doctors representing all the counties south of Bee and extending to the Rio Grande River, met for the first session of a three days' meeting and organized the Sixth District Medical Society. Names of officers not yet reported.

At Marquez, October 15th, the Leon County Medical Society held its twenty-second semi-annual session. Dr. S. R. Burroughs, of Buffalo, was elected president, and Dr. V. L. Smith, of Jewett, secretary. An elegant banquet was served at the McArthur Hotel.

At Luling, October 15th, the Caldwell Medical Society met, with Dr. F. R. Karboch, of Maxwell, as president, and Dr. W. H. Morgan as secretary. The next meeting will be at Lockhart, December 20th.

Dr. Rebecca M. Evans has resigned her position as college physician and health advisor in the College of Industrial Arts at Denton, and returned to her home in Kent, Ohio. The faculty and students are heartbroken over her departure.

At Houston is the Walter Colquitt Memorial Children's Hospital. It is the only institution of the kind in the South. It was erected by and depends upon the sales of Red Cross seals by the Texas Anti-Tuberculosis Association.

VIRGINIA.

The physicians of Princess Ann County organized at Prcess Ann courthouse October 16th. Dr. T. B. Luxford was elected President, Drs. T. L. Brooks and N. A. Nicholson, Vice-Presidents, and Dr. A. D. Tyes, Secretary-Treasurer. Eight county physicians were enrolled as members.

At Old Point Comfort, October 3-5, over 350 surgeons of the N. & W. system held a convention, which was marked with unusual enthusiasm. Dr. Sparrell S. Gale, of Roanoke, was elected president.

In Smyth County the doctors have recently organized into a County Medical Society. Dr. S. W. Dickonson was elected President, Dr. J. F. Earley, Vice-President, and Dr. E. H. Henderson, Secretary-Treasurer. Eighteen of the physicians of the county, two of them ladies, joined the organization.

The Norfolk County Medical Society elected Dr. E. A. Hatton, Vice-President, and Dr. H. P. McDowell, Secretary-Treasurer. Dr. E. C. Talliaferro was re-elected President.

The physicians of Pulaski County, on October 20th, organized the Pulaski County Medical Society, electing Dr. W. R. Cushing, of Dublin, President; Dr. G. G. Painter, of Pulaski, Vice-President, and Dr. R. H. Wooling, of Pulaski, Secretary-Treasurer. A constitution and by laws will be submitted at the next meeting.

The forty-fourth annual convention of the Virginia Medical Society convened at Lynchburg October 21st. Nearly two hundred physicians were present.

At Lynchburg, October 23rd, the Virginia Public Health Association elected Dr. Mosby Perrow, President; Drs. B. D. Bagby and C. T. Bower, Vice-Presidents, and Dr. Lucien Lofton, Secretary-Treasurer. The next convention will be at the University of Virginia in April.

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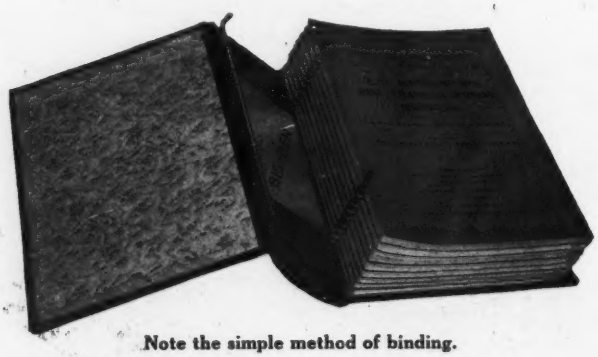

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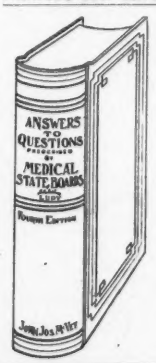

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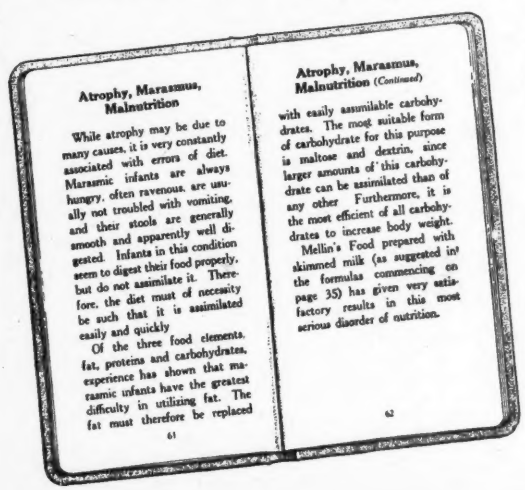

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Of the three food elements, fat, proteins and carbohydrates, experience has shown that marasmic infants have the greatest difficulty in utilizing fat. The fat must therefore be replaced

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Atrophy, Marasmus, Malnutrition (*Continued*)

with easily assimilable carbohydrates. The most suitable form of carbohydrate for this purpose is maltose and dextrin, since larger amounts of this carbohydrate can be assimilated than of any other. Furthermore, it is the most efficient of all carbohydrates to increase body weight.

Mellin's Food prepared with skimmed milk (as suggested in the formulas commencing on page 35) has given very satisfactory results in this most serious disorder of nutrition.

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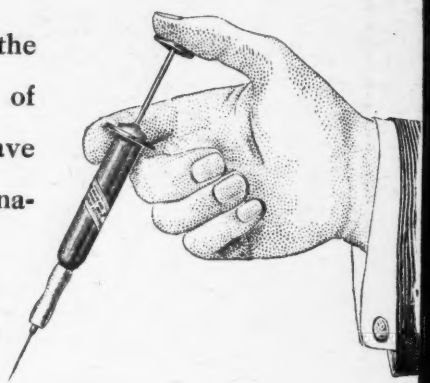

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